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SERVICE/TRAINING MANUAL

AZ2-UK *Chassis*

Segment: P-2F

ORIGINAL MANUAL ISSUE DATE: 1/2011

Version	Date	Subject
1.0	1/17/2011	No revisions or updates are applicable at this time.
2.0	1/24/2011	Reissue entire manual.

LCD Digital Color TV

SONY®

9-883-851-02

SERVICE/TRAINING MANUAL

AZ2-UK *Chassis*

Segment: P-2F

KDL-40BX420

LCD Digital Color TV

SONY®

9-883-851-02

MODEL LIST

MODEL	COMMANDER	DESTINATION
KDL-32BX320	*RM-YD065*	*MX/LA*
KDL-32BX320	*RM-YD065*	*US/CND*
KDL-32BX321	*RM-YD065*	*MX/LA*
KDL-32BX420	*RM-YD065*	*MX*
KDL-32BX420	*RM-YD065*	*US/CND*
KDL-32BX421	*RM-YD065*	*MX*
KDL-32BX421	*RM-YD065*	*US/CND*
KDL-40BX420	*RM-YD065*	*MX/LA*
KDL-40BX420	*RM-YD065*	*US/CND*
KDL-40BX421	*RM-YD065*	*MX*
KDL-40BX421	*RM-YD065*	*US/CND*

MODEL	COMMANDER	DESTINATION
KDL-46BX420	*RM-YD065*	*MX/LA*
KDL-46BX420	*RM-YD065*	*US/CND*
KDL-46BX421	*RM-YD065*	*US/CND*

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SECTION 1 - SAFETY AND FEATURES

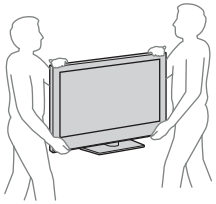
WARNINGS AND CAUTIONS - ENGLISH

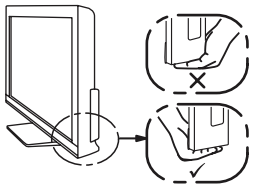
CAUTION

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

CARRYING THE TV

- Disconnect all cables when carrying the TV.
- Carry the TV with the adequate number of people; larger size TVs require two or more people.
- Correct hand placement while carrying the TV is very important for safety and to avoid damage.





WARNING!!

An isolation transformer should be used during any service to avoid possible shock hazard, because of live chassis. The chassis of this receiver is directly connected to the AC power line.

⚠SAFETY-RELATED COMPONENT WARNING!!

Components identified by shading and ⚠ mark on the exploded views are critical for safe operation.

Replace all components with Sony parts whose part numbers appear as shown in this manual or in supplements published by Sony. It is essential that all critical parts be replaced only with the part number specified in this manual to prevent electric shock, fire, or other hazard.

Circuit adjustments that are critical for safe operation are identified in this manual.

Follow these procedures whenever critical components are replaced or improper operation is suspected.

NOTE: Do not modify the original design without obtaining written permission from the manufacturer or you will void the original parts and labor guarantee.

CAUTION

⦸ Do Not use paper towels, any type of abrasive pad, rags, rubber or vinyl materials to clean the screen. Using these materials could easily scratch the screen which may result in permanent damage.

⦸ Do Not use any cleaning product containing alkaline/acid cleaner, scouring powder, or volatile solvent, such as alcohol, ammonia, benzene, thinner or insecticide. Using any of these harsh cleaners may result in permanent damage to the screen.

⦸ Do Not spray water or detergent directly onto the TV screen . If liquid drips into the bottom of the screen it may cause a failure.

CLEANING THE LCD PANEL

CAUTION: When cleaning the TV, be sure to unplug the power cord to avoid any chance of electric shock.

Clean the cabinet of the TV with a dry soft cloth.

Wipe the LCD screen gently with a soft cloth.

☑ Stubborn stains may be removed with a cloth slightly moistened with a solution of mild soap and warm water.

☑ If using a chemically pretreated cloth, please follow the instruction provided on the package.

☑ Never use strong solvents such as a thinner, alcohol or benzine for cleaning.

☑ Periodic vacuuming of the ventilation openings is recommended to ensure to proper ventilation.

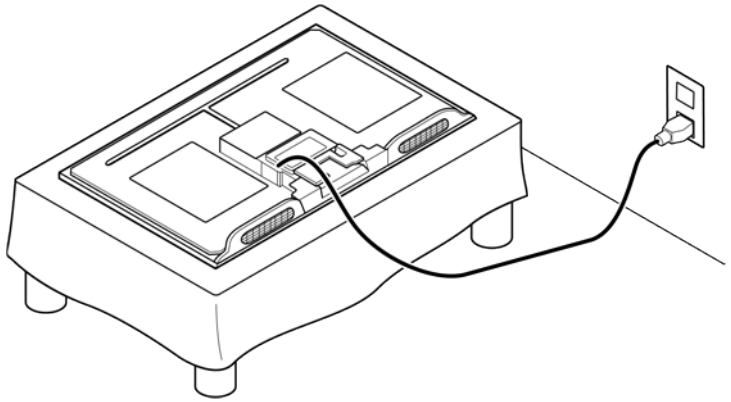
SAFETY-RELATED WARNINGS

USE CAUTION WHEN HANDLING THE LCD PANEL

When repairing the LCD panel, be sure you are grounded by using a wrist band.

When installing the LCD panel on a wall, the LCD panel must be secured using the 4 mounting holes on the rear cover.

1. Do not press on the panel or frame edge to avoid the risk of electric shock.
2. Do not scratch or press on the panel with any sharp objects.
3. Do not leave the module in high temperatures or in areas of high humidity for an extended period of time.
4. Do not expose the LCD panel to direct sunlight.
5. Avoid contact with water. It may cause a short circuit within the module.
6. Disconnect the AC power when replacing the backlight or inverter circuit.
   (High voltage occurs at the inverter circuit at 650Vrms.)
7. Always clean the LCD panel with a soft cloth material.
8. Use care when handling the wires or connectors of the inverter circuit. Damaging the wires may cause a short.
9. Protect the panel from ESD to avoid damaging the electronic circuit (C-MOS).
10. During the repair, DO NOT leave the Power On for more than 1 hour while the TV is face down on a cloth.



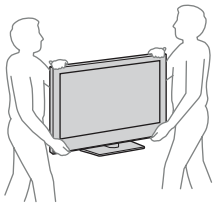
WARNINGS AND CAUTIONS - FRENCH

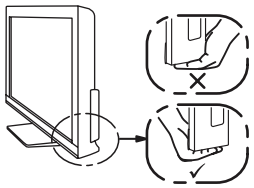
ATTENTION!!

Ces instructions de service sont à l'usage du personnel de service qualifié seulement. Pour prévenir le risque de choc électrique, ne pas faire l'entretien autre que celui contenu dans le Mode d'emploi à moins que vous soyez qualifié faire ainsi.

POUR TRANSPORTER LE TÉLÉVISEUR

- T ransportez le téléviseur avec le nombre de personnes approprié ; un téléviseur de grande taille doit être transporté par au moins deux personnes.
- Lors du transport du téléviseur , l'emplacement des mains est très important pour votre sécurité, ainsi que pour éviter de causer des dommages.





ALERTE!!

Afin d'eviter tout risque d'electrocution provenant d'un châssis sous tension, un transformateur d'isolement doit etre utilisé lors de tout dépannage. Le châssis de ce récepteur est directement raccordé à l'alimentation du secteur.

⚠ATTENTION AUX COMPOSANTS RELATIFS A LA SECURITE!!

Les composants identifies par une trame et par une marque ⚠sur les schemas de principe, les vues explosees et les listes de pieces sont d'une importance critique pour la securite du fonctionnement. Ne les remplacer que par des composants Sony dont le numero de piece est indique dans le present manuel ou dans des supplements publies par Sony. Les reglages de circuit dont l'importance est critique pour la securite du fonctionnement sont identifies dans le present manuel. Suivre ces procedures lors de chaque remplacement de composants critiques, ou lorsqu'un mauvais fonctionnement suspecte.

AVERTISSEMENT

⦸ N'utilisez pas de serviettes en papier, tout type de tampons ou chiffons abrasifs, ou matériaux en caoutchouc ou en vinyle pour nettoyer l'écran. Ces types de matériaux peuvent facilement rayer l'écran, entraînant ainsi un dommage permanent.

⦸ N'utilisez pas de produit de nettoyage contenant un nettoyant alcalin/acide, poudre abrasive ou solvant volatil, comme de l'alcool ou de l'ammoniaque, du benzène, un diluant ou un insecticide. L'usage de ces types de nettoyants peut causer des dommages permanents à l'écran.

⦸ Ne vaporisez pas d'eau ou de détergent directement sur l'écran du téléviseur. Si du liquide s'insère dans le bas de l'écran, cela peut causer une panne.

NETTOYER L'ÉCRAN ACL

AVERTISSEMENT : Au moment de nettoyer le téléviseur, assurez-vous de débrancher le cordon d'alimentation afin d'éviter tout risque de choc électrique.

Nettoyez le caisson du téléviseur avec un chiffon doux et sec.

Essuyez l'écran ACL doucement avec un chiffon doux.

☑ Les taches tenaces peuvent être enlevées avec un chiffon légèrement humecté d'une solution de savon doux et d'eau tiède.

☑ Si vous utilisez un chiffon chimique prétraité, suivez les directives figurant à l'emballage.

☑ N'utilisez jamais de solvants puissants comme un diluant, de l'alcool ou du benzène pour nettoyer.

☑ Nous recommandons de passer l'aspirateur de façon périodique sur les ouvertures de ventilation afin d'assurer une ventilation appropriée.

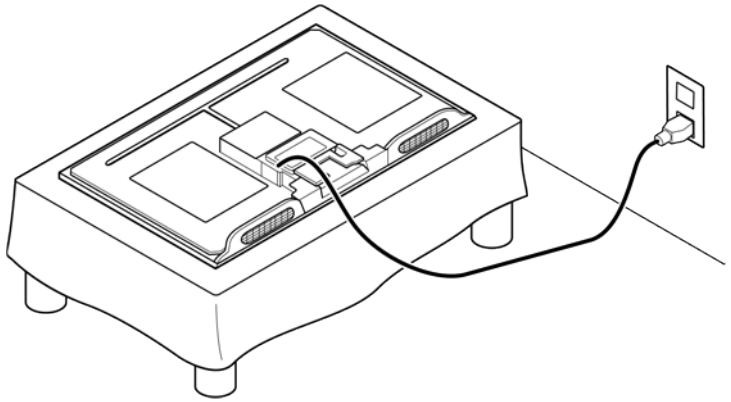
AVERTISSEMENTS DE SÉCURITÉ

FAITES ATTENTION LORS DE LA MANIPULATION DE L'ÉCRAN ACL

Au moment de réparer l'écran ACL, assurez-vous d'être mis à la terre à l'aide d'un bracelet à cet effet.

Au moment d'installer le panneau ACL sur un mur, il doit être maintenant en place à l'aide des 4 orifices de fixation présents au couvercle arrière.

1. N'appuyez par sur le bord du panneau ou du cadre afin d'éviter le risque de choc électrique.
2. Ne rayez pas ou n'appuyez pas sur le panneau avec des objets pointus.
3. Ne laissez pas le module exposé à des températures élevées ou dans des secteurs à haut niveau d'humidité pour une période prolongée.
4. N'exposez pas le panneau ACL à l'ensoleillement direct.
5. Évitez le contact avec l'eau, car elle peut causer un court-circuit dans le module.
6. Déconnectez l'alimentation c.a. au moment de remplacer le rétroéclairage ou le circuit inverseur (Un voltage élevé se produit dans le circuit inverseur à 650Vrms).
7. Nettoyez toujours le panneau ACL avec un chiffon doux.
8. Faites attention lors de la manipulation des fils ou connecteurs du circuit inverseur. Le fait d'endommager les films peut causer un court-circuit.
9. Protégez le panneau des décharges électrostatiques afin d'éviter d'endommager le circuit électronique (C-MOS).
10. Pendant la réparation, NE LAISSEZ PAS l'alimentation en fonction pendant plus de 1 heure pendant que l'écran du téléviseur repose sur un tissu.



SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are “pinched” or touching high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA(500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instructions.
2. A battery-operated AC milliampmeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low voltage scale.
   The Simpson's 250 and Sanwa SH-63TRD are examples of passive VOMs that are suitable. Nearly all battery-operated digital multimeters that have a 2 VAC range are suitable (see Figure A).

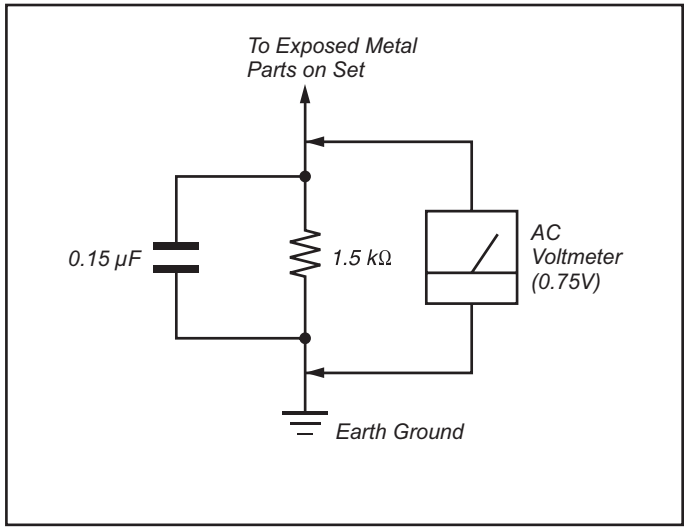


Figure A. Using an AC voltmeter to check AC leakage.

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is a guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground.

If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms.

If a cold-water pipe is not accessible, connect a 60-to 100-watt trouble-light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side on the line; the lamp should light at normal brilliance if the screw is at ground potential (see Figure B).

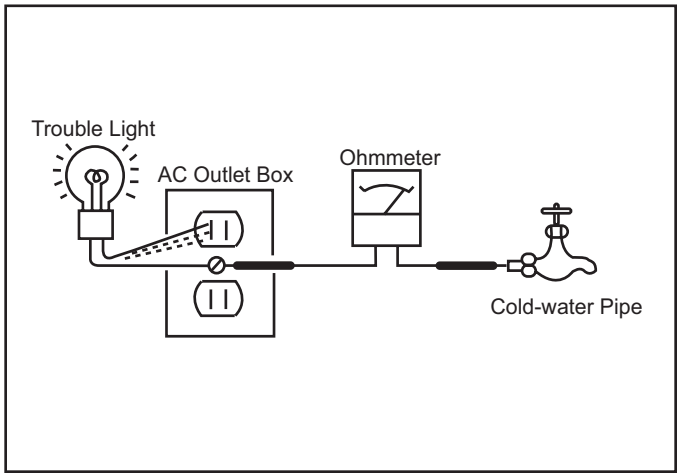


Figure B. Checking for earth ground.

SELF DIAGNOSIS FUNCTION

The TVs in this manual contain a self-diagnostic function. If an error occurs, the STANDBY LED will automatically begin to flash. The number of times the LED flashes translates to a probable source of the problem. A definition of the STANDBY LED flash indicator is listed in the Operating Instruction manual for the user's reference.

If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

For complete information, refer to Section 4 - Troubleshooting on page 22.

OVERVIEW

The AZ2-UK chassis is one of several designs for the 2011 model line of Sony Bravia® LCD televisions. This manual covers the following models:

KDL32BX320

KDL32BX321

KDL32BX420

KDL32BX421

KDL40BX420

KDL40BX421

KDL46BX420

KDL46BX421

The chassis design revolves around the video processing circuits located on the A board. The key difference between models is determined by the size of the LCD panel and its manufacturing source. This manual will describe the new circuit features and individually describe the models based on these differences.

FEATURES

Several new features are introduced in this chassis model lineup along with some carryovers from the previous year.

SCENE SELECT

Easily manage your settings for the best HDTV experience with Scene Select. Choose from five different packages each with preconfigured picture and audio settings, including Sports, Photo, Game, Cinema and Music.

USB INPUT

Share your photos on the big screen or listen to your favorite music. Simply connect your digital camera, USB-enabled MP3 player, or USB storage device directly to your HDTV's USB input.

LIGHTSENSOR™ TECHNOLOGY

Enjoy customized picture brightness and save energy without lifting a finger. The built-in Light Sensor automatically adjusts the picture brightness based on the amount of light in the room.

5 HD INPUTS

Get versatile HD connection options with five HD inputs, including two HDMI™ inputs, two HD component inputs provide added HD-capable connectivity in addition a PC input (HD-15 pin) lets you use your HDTV as a computer monitor.

BRAVIA® SYNC™ COMPATIBLE

Conveniently operate and control other BRAVIA® Sync™ compatible devices - including BRAVIA® HDTVs, Blu-ray Disc™ Players, surround sound systems, Handycam® camcorders and Cyber-shot® digital still cameras, all with one remote control.

KDL-32BX320/32BX321 MODELS ONLY

HD 720P RESOLUTION PANEL

Enjoy crisp, detailed and vibrant images in 720p picture quality while watching movies, sports and primetime HD television broadcasts via the 16:9 wide screen panel (1366 x 768).

ALL EXCEPT KDL-32BX320/32BX321 MODELS

FULL HD 1080P RESOLUTION

Experience amazing Full HD 1080p picture quality, the highest at-home resolution. Take full advantage of HD sources like a Blu-ray Disc™ Player or PlayStation®3 gaming console via the 16:9 wide screen panel (1920 x 1080).

SPECIFICATIONS

System	
Television system	NTSC: American TV standard ATSC (8VSB terrestrial): ATSC compliant 8VSB QAM on cable: ANSI/SCTE 07 2000 (Does not include CableCARD functionality)
Channel coverage	Analog terrestrial: 2 - 69 / Digital terrestrial: 2 - 69 Analog Cable: 1 - 135 / Digital Cable: 1 - 135
Panel system	LCD (Liquid Crystal Display) Panel
Speaker output (except KDL-22BX321/BX320)	8 W + 8 W
Speaker output (KDL-22BX321/BX320 only)	5 W + 5 W
Input/Output jacks	
CABLE/ANTENNA	75-ohm external terminal for RF inputs
VIDEO IN 1/2	VIDEO: 1 Vp-p, 75 ohms unbalanced, sync negative AUDIO: 500 mVrms (Typical) / Impedance: 47 kilohms
COMPONENT IN	YPBPR (Component Video): Y: 1.0 Vp-p, 75 ohms unbalanced, sync negative / PB: 0.7 Vp-p, 75 ohmsPR: 0.7 Vp-p, 75 ohms / Signal format: 480i, 480p, 720p, 1080i, 1080p AUDIO: 500 mVrms (Typical) / Impedance: 47 kilohms
HDMI IN	HDMI: Video: 480i, 480p, 720p, 1080i, 1080p, 1080/24p Audio: Two channel linear PCM 32, 44.1 and 48 kHz, 16, 20 and 24bits, Dolby Digital PC Input
AUDIO OUT	500 mVrms (typical)
DIGITAL AUDIO OUT (OPTICAL)	PCM/Dolby Digital optical signal
PC IN	D-sub 15-pin, analog RGB, 0.7 V p-p, 75 ohms, positive See the PC Input Signal Reference Chart for PC and HDMI IN in the OI manual.
PC/HDMI IN 1 AUDIO INPUT	Stereo mini jack, 500 mVrms, (Typical) / Impedance: 47 kilohms

Licensing Information

Macintosh is a trademark of Apple Inc., registered in the U.S. and other countries.

HDMI, the HDMI logo, and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing, LLC in the United States and other countries.

Fergason Patent Properties, LLC:
U.S. Patent No. 5,717,422
U.S. Patent No. 6,816,141

Manufactured under license from Dolby Laboratories. Dolby and the double-D symbol are trademarks of Dolby Laboratories.

Blu-ray Disc is a trademark.

"BRAVIA" and BRAVIA, BRAVIA Sync, and are trademarks or registered marks of Sony Corporation.

"PlayStation" is a registered trademark and "PS3" is a trademark of Sony Computer Entertainment Inc.

Your BRAVIA TV is ENERGY STAR® qualified in the "Home" mode. It meets strict energy efficiency guidelines set by the U.S. Environmental Protection Agency and Department of Energy.
ENERGY STAR is a joint program of these government agencies, designed to promote energy efficient products and practices. Changes to certain features, settings, and functionalities of this TV (i.e. Picture/Sound, Power Savings) can increase or change the power consumption. Depending upon such changed settings, the power consumption may exceed the limits required for the ENERGY STAR qualification in the "Home" mode.

Model name KDL-	46BX421 46BX420	40BX421 40BX420	32BX421 32BX420	32BX321 32BX320
Power and others				
Power requirement	110-240 V AC, 50/60 Hz (U.S.A./Canada/Mexico 120 V AC, 60 Hz)			
Power consumption in use	210 W	180 W	115 W	
in standby	Less than 0.25 W with 120 V AC and with 240 V AC less than 0.35 W			
Screen size (inches measured diagonally)	46	40	31.5 (32 class)	
Display resolution	1,920 dots (horizontal) × 1,080 lines (vertical)			1,388 dots (horizontal) × 768 lines (vertical)
Speaker/Full range (2) (mm) (inches)	40 × 100 (1 5/8 × 4)			
Dimensions with stand (mm) (inches)	1,120 × 707 × 294 44 1/8 × 27 7/8 × 11 5/8	988 × 632 × 250 39 × 25 × 9 7/8	800 × 528 × 220 31 1/2 × 20 7/8 × 8 3/4	
without stand (mm) (inches)	1,120 × 674 × 97 44 1/8 × 26 5/8 × 3 7/8	988 × 600 × 94 39 × 23 5/8 × 3 3/4	800 × 496 × 91 31 1/2 × 19 5/8 × 3 5/8	
wall-mount hole pattern (mm)	300 × 300		200 × 200	
wall-mount screw size (mm)	M6 (length: refer to diagram in Operating Instruction manual)			
Mass with stand (kg) (lb.)	20.1 44.3	15.7 34.6	10.7 23.6	
without stand (kg) (lb.)	17.7 39.0	13.6 30.0	9.1 20.1	
Supplied accessories common to all models	Remote control RM-YD065 (1)/Size AA batteries (2)/Operating Instructions (1)/Quick Setup Guide (1)/Warranty Card (1)/Safety and Regulatory Booklet (1)/Software License (1)/Stand installation guide (1)/Table-Top Stand (1 set)			
individual models	Screw (7)			
Optional accessories	Connecting cables / Support Belt Kit / Wall-Mount Bracket: SU-WL500			

SECTION 2 - SOFTWARE REQUIREMENTS

OVERVIEW

There are 2 reasons for updating the software on the TVs.

- Software updates for customers
  These updates are for enhancements or improvements that have been made to the software after the TV was released. These updates are accessed by the customer from the Sony Support Site at http://esupport.sony.com.
- Software update for servicers
  These updates are specifically for servicers to use during a service call and are only available on the Sony Authorized Servicer Portal at http://www.sony.com/asp.

SOFTWARE UPDATES FOR CUSTOMERS

The subject of software updates is a very important. The televisions of today have advanced to the point where they are not simply a television anymore. They are evolving into devices that are designed to integrate with numerous other devices found in the home. Some examples are: Portable audio and video devices, still cameras, home computer networks and accessing the internet to name a few.

Communications with these varying devices requires that the television be compatible with varying communications protocols. Although standards are detailed for each of these protocols, the real world dictates that occasional errors may occur that could prevent devices from operating or communicating properly.

Keeping the software in the television up-to-date is a procedure that is normally handled by the owner of the television. Most customers who own computers and other digital devices are familiar with and are accustomed to updating the software in their products. If a customer contacts the Sony Customer Support Center and it is deemed to be correctable with a software update, the issue is handled at the customer level.

Software updates can be performed by:

- Customer Manual Downloads: Software updates can be accessed by the customer from the Sony Support Site at http://esupport.sony.com where they can be downloaded and placed on a USB thumb drive to be loaded onto the TV. The instructions for downloading the software file vary from chassis to chassis and sometimes from model to model. The customer is provided with the instructions to properly format the USB thumb drive, unzip the file, and the procedures for loading the software into the television.

SOFTWARE UPDATES FOR SERVICERS

The models in this manual utilize a “generic” type main board. In the past, many different main boards needed to be stocked due to differences in software requirements. The software loaded on the board was specific to the model and its features along with the type of LCD panel installed during production.

Replacement main boards are now stocked with basic software. Once the replacement board is installed in the unit, the most current software needs to be installed using a USB thumb drive containing the necessary software downloaded.

This new method of supplying main boards significantly reduces the complexity of replacing LCD panels and main boards. Information about the LCD panel is stored on the TCON circuits. This information is automatically loaded onto the main board when the TV is powered up. With the correct software version the main board and/or the TCON or LCD panel can be replaced more efficiently. The software update and procedures for the software installation are located on the Sony Authorized Servicer Portal at http://www.sony.com/asp.

In addition to software installation, service adjustment information may need to be modified or verified to complete the service of the TV. Service adjustment information is covered in Section 7 - Service Adjustments on page <?>.

SOFTWARE UPDATE RESPONSIBILITY

Software updates are designed to be performed by the customer. Warranty repairs in which the issue can be resolved by a software update ***are not reimbursable***. Most issues involving software updates are handled by the customer service center and should not be directed to an authorized service center. It is the responsibility of the servicer to prevent service calls for issues that involve software updates. Exceptions to this are certain cases whereby the customer is unable or unwilling to perform the task. In this situation, the servicer will be notified and receive the proper authorization for reimbursement.

It is the servicer’s responsibility, however, to ***make certain that any TV requiring a legitimate service is running the latest software version and to install it if necessary***.

CHECKING THE SOFTWARE VERSION

The easiest way to check the version of software that is currently on the TV is to access the Contact Sony screen by using the customer menu.

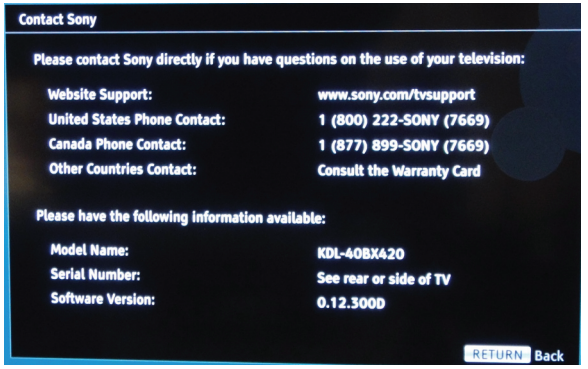


FIGURE 2-1. SOFTWARE VERSION ON THE CONTACT SONY SCREEN

EXAMPLES OF SOFTWARE CORRECTABLE SYMPTOMS

Always check the Sony Authorized Servicer Portal at www.sony.com/asp site for any known and/or listed issues that are software related. Most symptoms that are correctable by software updates involve communications issues with other devices or minor glitches in the operation of a specific function. Below is a list of some of the symptoms that may be corrected with a software update:

- Fluctuations in picture brightness
- Intermittent picture freezing or noise
- Problems with certain inputs (especially HDMI)
- Intermittent or distorted audio
- Erratic remote control operation
- Unit turns on and off by itself
- Loss of color
- Internet connectivity
- Certain features not working correctly (photo or video file viewing)

SECTION 3 - CHASSIS OVERVIEW

OVERVIEW

The primary circuits contained in this chassis consists of a main circuit board (designated as the A board), power supply board (G13 for the 32”, G14 for the 40”, and G3 for the 46”), Timing Control (TCON), and the LCD panel assembly. The remaining boards contain switches and LED’s.

NOTE: For connector part number information, refer to Connectors on page 50. For Wire Dressing information, refer to Wire Dressing on page 54.

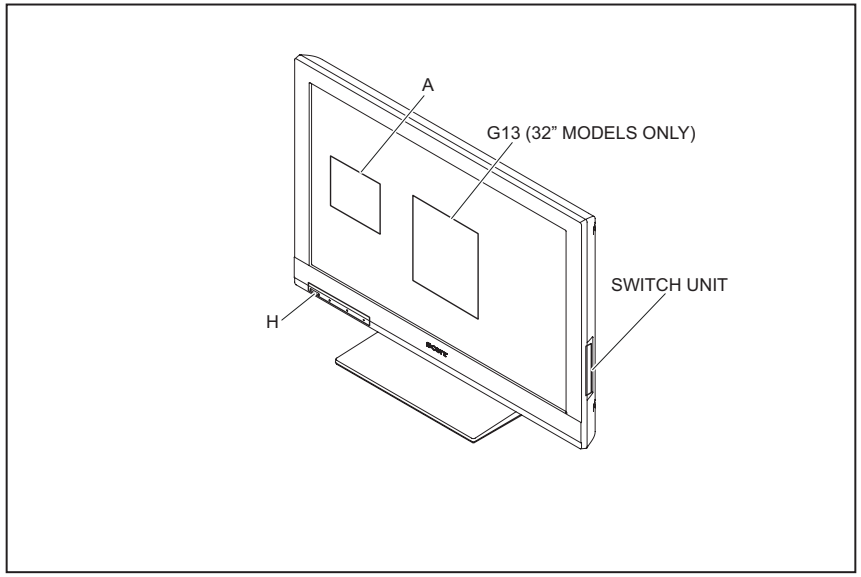


FIGURE 3-1. CIRCUIT BOARD LOCATION FOR KDL-32BX320/32BX321/32BX420/32BX421 ONLY

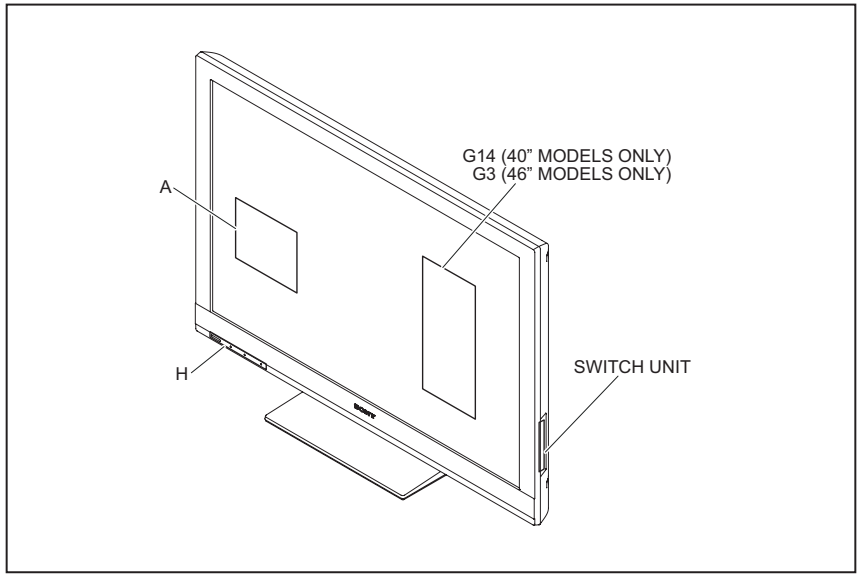


FIGURE 3-2. CIRCUIT BOARD LOCATION FOR KDL-40BX420/40BX421/46BX420/46BX421 ONLY

OVERALL CIRCUIT DESCRIPTION

Figure 3-3. Block Diagram on page 21 provides an overview of the AZ2-UK chassis. Below is a description of the components and their functions.

A BOARD

Common to all models utilizing the AZ2-UK chassis, the A board contains most of the video processing circuitry along with all audio processing. Control of the television is accomplished via a CPU embedded within the MT5388 processor. Below is a list of the key components located on the A board.

TUNER

The tuner is a combination ATSC/NTSC unit. It can receive traditional analog NTSC signals via cable or terrestrial along with ATSC digital signals via terrestrial (8VSB) or cable (64 or 256 QAM).

MT5388 PROCESSOR

IC U3 performs the majority of the necessary audio and video processing on the A board.

Analog Video Input Switch: All analog video sources are selected and A/D converted and scaled (if necessary) to 1280 X 720p 60HZ resolution.

Digital Audio and Video Decoder: The MPEG2 and Digital Dolby audio streams are received from the tuner for decompression. All video sources which are not native 1280 X 720p 60HZ are scaled to this resolution. Digital audio content is output to the class D amplifier for processing and amplification.

Audio Processing: Analog audio sources are selected and A/D converted directly by U3. The audio information is then processed digitally. Digital audio from the tuner and HDMI sources is also input and processed. Class D amplifier U8 provides the drive for the speakers.

HDMI Input and Switching: The customer can select the HDMI1 or HDMI2 input. Each HDMI input contains a dedicated EDI NVM (not shown) to provide display information data to any device connected via the HDMI inputs.

CPU: The CPU internal to the MT5388 processor controls all aspects of the television functions. Input from the user along with monitoring of critical circuits is also performed by this CPU.

LVDS Transmitter: Integrated into U3 is a Low Voltage Differential Signaling (LVDS) transmitter. This circuit converts the 8-bit parallel RGB video information into a set of high speed serial lines for noise-free transmission to the TCON circuits located internally to the LCD panel.

POWER SUPPLY

There are 3 different power supply boards used in the models in this manual. The type of board depends on the size of LCD panel. They are:

G13 for the 32” models

G14 for the 40” models

G3 for the 46’ models

There are 2 distinct sections on the power supply:

Standby Supply: Continuously operational as long as AC power is applied, the standby supply generates 3.3VDC for the circuits requiring power while the unit is turned off. An unregulated 15-volt line is present to provide power to the main relay, PFC and main power supply at turn-on.

Main Supply: Once the power supply receives a power-on command from the CPU on the A board, the main switching supply is turned on to provide a regulated 12V source, a dedicated un-regulated 15V for the audio circuits and an unregulated 24V source for the inverter circuit.

INVERTER

The inverter receives the unregulated 24V from the power supply board and generates the required high voltage AC to power the backlight lamps. A control line to turn on the inverter (backlights on) is used in conjunction with a dimmer control to vary the light level of the CCFL lamps.

As of the writing of this manual, the inverter is not available as a replacement part. The LCD panel assembly must be replaced.

SWITCH UNIT

This board contains the power, channel and volume up/down and menu buttons.

H BOARD

The power, standby and timer LED's are located on this board along with the IR remote receiver and light sensor.

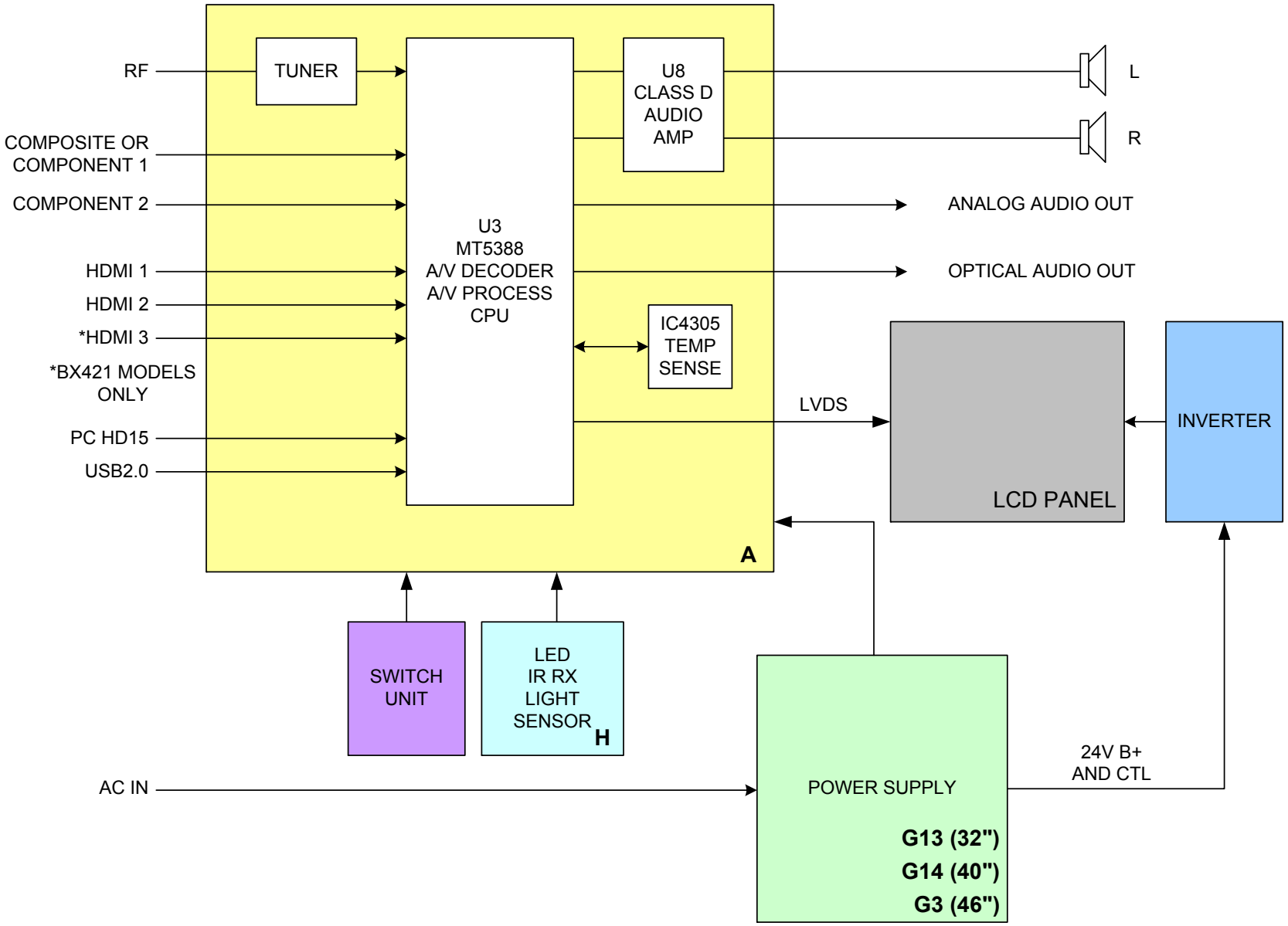


FIGURE 3-3. BLOCK DIAGRAM

SECTION 4 - TROUBLESHOOTING

OVERVIEW

Most troubleshooting for this chassis focuses on the 3 major components used:

- The Main Board (A)
- Power Supply
- LCD Panel

This chapter provides practical troubleshooting procedures based on the various symptoms that will appear when a particular circuit fails to operate properly. Typical failure symptoms will be discussed in this chapater with troubleshooting flowcharts for each symptom in the Section 5 - Flow Charts and Diagrams on page 31.

NOTE: Always remember to check the Sony Authorized Servicer Portal at www.sony.com/asp to access the latest technical bulletins along with triage charts to quickly identify the most like part to complete the repair based on the symptom.

UPDATING THE SOFTWARE

As mentioned in Section 2 - Software Requirements, there are several issues that may be resloved by updating the software to the latest version. For a list of possible correctable issues see Checking the Software Version on page 16.

VIDEO FAILURES

Problems that develop in the video circuits can appear as subtle or major distortions, a loss of one or more colors, improper video level, or a complete loss of video. When troubleshooting LCD display devices the problem must be isolated to 2 major components: The main board where the video processing is performed or the LCD panel. In some cases the TCON may not be available as a separate component and replacement of the LCD panel is required to rectify a TCON problem.

Distortion in the video signal that affects all inputs can be challenging at times since any of the above mentioned components can be the cause. Fortunately, each of these components tends to generate unique symptoms when a problem occurs. Some distortions may occur that could be caused by either of these components but a good understanding of the circuits and further investigation will isolate the suspected circuit. The following sections will cover the various scenarios of problems that may occur in the video processing circuits.

NO VIDEO

A “no video” complaint can be caused by a number of reasons. The first step is to determine if the condition is present from all input sources. If any video source is working properly, the TCON (located within the LCD panel) can be assumed to be OK. The backlights are also functioning properly. Although it is unusual for a backlight failure to cause a complete loss of video (the TV will shut down if a backlight power or open LED is detected) there have been cases where the backlights have failed to turn on without the unit shutting down.

If the loss of video occurs on all inputs, the problem will require additional diagnostic work. The presence of audio is an important sign to check for. Missing audio accompanying a loss of video helps to eliminate the TCON as the cause and would point to the main board as the culprit. If audio is present, the next step is to determine if the video loss is occurring in the video process circuits on the main board, or the LVDS cable link from the main board to the LCD panel.

Service Tip: If a service call is made for a “no video” complaint, a warranty repair would require the technician to bring the main board to the location. Install the main board and if the video problem is not resloved it is safe to assume the problem might reside in the TCON. If the TCON is not available as a replacement part, this issue would require replacing the LCD panel.

HINT: One method to test a TCON, which works rather well in most cases, is to remove the LVDS connector at the panel connection while the TV is running. *Be certain to release the lock tabs and handle the connector carefully to avoid damage.* If there is any tape securing the cable to the panel near the input, temporarily remove the tape to allow free movement of the cable.

Carefully insert and remove the connector while slightly rocking it. Observe the screen as you do this. If any activity appears on the screen (flashes, lines or patterns) The TCON is OK. The TV may shut down within a 10 to 20 second period because the protect circuits have detected a TCON failure. If this happens, simply re-insert the LVDS connector, turn the TV back on, and try the procedure again. Normally, you should be able to detect something on the screen within a matter of seconds.

Figure 5-2. Video Distortion Flowchart on page 32 should provide assistance in isolating the cause of the video loss.

VIDEO DISTORTION

This is, perhaps, the more difficult failure to diagnose. It is difficult when talking to the customer on the phone because an accurate description of the problem must be obtained in order to determine which part (or parts) to bring to the location. It may also be difficult for the technician when the problem is witnessed.

If the problem is specific to one or more inputs it should be easy to determine if the fault lies on the main board or a device that is plugged into it. If the distortion occurs at all inputs it must be analyzed based on what appears on the display and isolated to the main board, TCON, or LCD panel. These components usually cause distortions that are unique to the specific circuit. Below is an example of the typical distortions:

Main Board (A Board): Since the video signal is processed on a frame-by-frame basis it is very unlikely that a distortion that is occurring on a specific part of the display panel is originating here. Distortion problems originating in the video process circuits tend to affect the entire picture. The following are some examples:

- Improper color reproduction or no color
- Improper luminance levels
- Lack of detail in the picture
- Distortions that change with movement in the video
- Diagonal lines
- No video

TCON: Since the TCON allocates the RGB video information based on specific timing information, the distortions tend to be fixed and usually appears as symmetrical patterns that occupy most (or a significant portion) of the display. The TCON circuits in this chassis are integrated within the LCD panel which requires replacement of the entire panel to remedy a TCON failure. Some examples of TCON errors:

- No video
- Thin vertical lines spanning most or all of the display
- More that one column of wide vertical columns which may appear black or any color, or may contain distorted video.
- Multi-colored vertical line patterns with a repetitive pattern

Service Tip: Whenever vertical lines of distortion appear, select an inactive input or disconnect the antenna in the tuner mode. The idea is to not have a high-definition signal as the source. This allows the picture zoom functions to operate.

Change the zoom mode from the remote commander. If the lines follow the normal and zoom modes the problem resides on the main board. If the lines remain fixed throughout the various zoom modes the TCON is at fault.

LCD Panel: Distortions originating from the LCD panel tend to be localized with the exception of horizontal line issues. A failure of a gate driver can cause a horizontal distortion with all video content below that point appearing distorted. Depending on which gate driver has failed, the distortion may only cover a small area of the bottom of the screen if the driver failed near the bottom of the panel, or a large area of the screen if the driver failed near the top of the panel. With the exception of visible physical damage, the following are some examples of LCD panel related distortions:

- Any single, thin vertical line (regardless of color)
- Any thin vertical lines isolated to a specific area of the screen
- A singe vertical column of lines of any color or containing distorted video
- Any fixed horizontal lines
- Blotches of black or improperly colored areas
- Ghosting of images in which the entire image is repeated one or more times

A thorough understanding of how the video is processed throughout the chain of circuits all the way to the panel is important. A past article written for the Sony Newsletter described, in detail, how this process works.

Figure 5-2. Video Distortion Flowchart on page 32 will assist in isolating which component is causing the distortion.

AUDIO TROUBLESHOOTING

Since all audio signals are input, processed and amplified by the main board, any issue involving the loss of audio or audio distortions which are present at all inputs would dictate that the issue can be resolved by replacing the main board. It is possible that a software update might also resolve the issue, but it is very unusual for a software update to affect all sources. Once again, always check the Sony Authorized Servicer Portal at www.sony.com/asp for any known and/or listed issues that are software related.

Audio problems that are input specific (especially the HDMI and digital sources such as the USB input and tuner) are more likely to point to the need for a software update and this is especially true if the problem is intermittent.

POWER SUPPLY TROUBLESHOOTING

Failures in the power supply circuits that prevent the TV from turning on are caused by one of the following scenarios:

- Complete failure of the standby and main power supplies.
- Failure of the main supply including the main switching regulator, PFC circuit, main relay and other components required to turn the circuits on.
- The power supply is not receiving a turn-on command from the CPU.

COMPLETELY DEAD SET

A complete power supply failure is generally the result of severe transients in the AC line such as those incurred during an electrical storm. This model line utilizes a red standby LED located on the lower left front bezel that is lit whenever the TV is receiving AC power and is turned off. If it is not lit, and AC power to the television is confirmed, replacement of the power supply board should rectify the problem.

TV WON'T POWER ON

This situation assumes that the red standby LED is lit when AC power is applied to the TV. A lit standby LED indicates that the standby power supply is operational, and the CPU on the main board is at least partly operational. In this case it is likely that the main power supply is either not being turned on or it has failed. Use the power-on button on the right side of the TV to attempt a turn-on and eliminate a defective remote control system. Figure 5-3. Power Supply Flowchart on page 33 will assist in isolating the power problem.

BACKLIGHT ISSUES

Under normal circumstances, any failures in the backlighting system will cause the unit to shut down. If any section of the inverter circuits fails to operate properly, the unit will shut down and blink the standby LED in groups of 6.

If one or more of the fluorescent backlights fails to light, the over-voltage protection circuit of the inverter is activated. The inverter shuts down and the same 6-blink protect event occurs.

The recommended approach for a 6-blink shutdown is to determine if the backlights are turning on before the shutdown. The easiest way to determine this is to watch for the Sony logo to appear on the screen. The television will make 2 or 3 attempts to achieve proper lighting of the lamps. If the Sony logo appears, the backlights are turning on and the problem is likely due to one of the lamps not lighting. If the lamps never turn on and no Sony logo appears on the screen, the inverter is the likely suspect.

NO BACKLIGHT, NO SHUTDOWN

It is possible for a symptom of no backlighting to occur that does not cause the television to go into protective shutdown. Dynamic dimming control of the backlights is performed by monitoring information from the TCON circuits. This is in the form of data and determines the brightness level of the backlights based on video content.

If the TCON fails to process the RGB video data, or if the dimmer data line fails, the backlights will not turn on. Audio will be present if the selected input has it available. The television will remain on indefinitely with the green Power LED lit. In this scenario, the LCD panel must be replaced.

PROTECTION SHUTDOWN

Self Diagnosis Supported model

Critical voltages and circuit operations are monitored by the CPU on the main board. If a fault is detected the Self-Diagnostic function in the TV will force the TV to shut down by the CPU. The monitored circuit in which the fault occurred will cause the CPU to flash the Stand-By LED in groups of repeating sequences. The number of blinks in these groups identifies which voltage or circuit caused the protection event.

Not all of the available protect codes are used in every model. For example, models that are LED backlit do not use the 4-blink balancer error as this circuit is found in models that are backlit with fluorescent lamps. The following list contains the protect circuits and diagnostics codes used in the models listed in this manual. Figure 5-4. Protection Shutdown Flowchart on page 34 provides guidance in locating the possible component causing the shutdown.

STANDBY LED FLASH COUNT

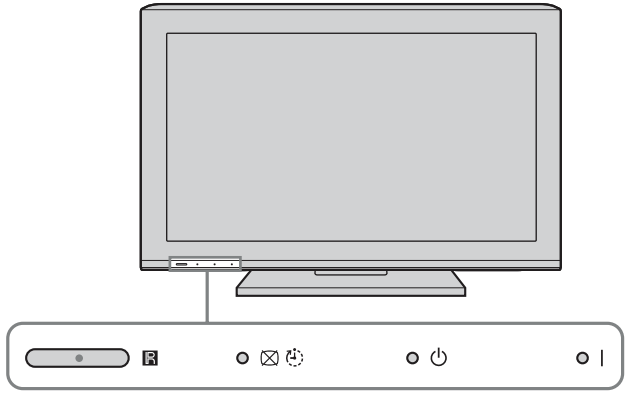


FIGURE 4-1. LED DISPLAY

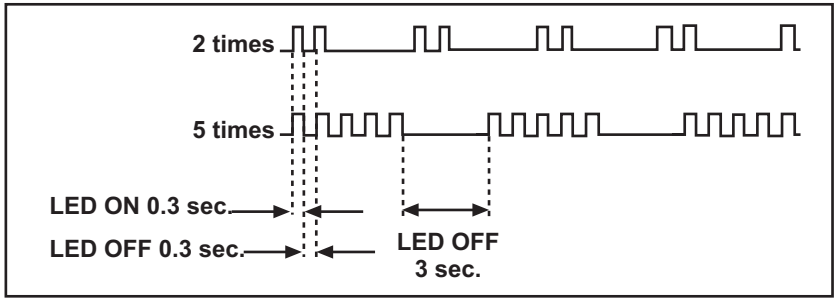


FIGURE 4-2. BLINK COUNT

2X Blink - Main Power Error

A loss of REG12V from the power supply triggers this protect event. This symptom is usually remedied by replacing the power supply board. If the error continues after the power supply board is replaced, suspect excessive loading which is causing the power supply to shut down. This is usually caused by a failure of the inverter circuits. Unplug the inverter and turn the TV back on. If a 6X error is displayed, the inverter (or LCD panel) must be replaced.

3X Blink- DC Regulator/Audio Error

The REG 5V and D3.3V source originating on the main board is monitored for low-voltage conditions by the CPU. A failure causing a 3X shutdown would require replacing the main board.

5X Blink - TCON Error

A communications error with the timing control circuits (TCON) has occurred. If the TCON is available for replacement, replace the TCON. If the TCON is not available, the LCD panel must be replaced since the TCON circuit is part of the LCD panel assembly. In rare cases a loose or defective LVDS cable could also be the cause.

6X Blink - Backlight System Failure

If the inverter circuits fails to generate high voltage or one or more of the backlight lamps fails to light, the television will shut down and display this diagnostics error. Observing for the presence of backlighting is crucial in determining which component is likely at fault.

If the backlights turn on before the 6X shutdown occurs, it is safe to assume that the inverter circuits are functioning and one of the lamps failed to ignite. Replacing the LCD panel is necessary. If the backlights never turn on before the 6X shutdown, the inverter has failed. If the inverter is available for replacement, replace the inverter. If the inverter is not available, replace the LCD Panel.

7X Blink - Temperature Failure

A digital thermometer IC located on the main board provides a temperature reading of the chassis and LCD panel. If the temperature exceeds a pre-determined point the TV will shut down. If this problem occurs immediately at turn-on, the temperature sensing IC has failed and replacing the main board is required. If this occurs after the TV has been running for a while, check for ventilation issues that could cause the TV to run hotter than normal.

DIAGNOSTIC CODE DESCRIPTIONS

The Diagnotic Table provides an overview of the number of times the Standby LED blinks and the possible location. To access the Triage documents for the models listed in this manual, login into the Sony Authorized Servicer Portal at www.sony.com/asp.

Diagnostic Item	Diagnostic Item Description	Number of times Standby LED blinks	Possible Location
MAIN_POWER	Main Power Over Voltage Protection	2	G13 (Power) Board (for 32" models only) G14 (Power) Board (for 40" models only) G3 (Power) Board (for 46" models only) A Board
DC_ALERT AUD_PORT	DC Alert Audio Error Detection	3	A Board G13 (Power) Board (for 32" models only) G14 (Power) Board (for 40" models only) G3 (Power) Board (for 46" models only)
BALANCER	Panel Balancer Error	4	NOT USED
TCON ERR	TCON Error	5	LCD Panel
BACKLITE	Backlight Error	6	LCD Panel G13 (Power) Board (for 32" models only) G14 (Power) Board (for 40" models only) G3 (Power) Board (for 46" models only)
TEMP_ERR	Temperature Error	7	A Board

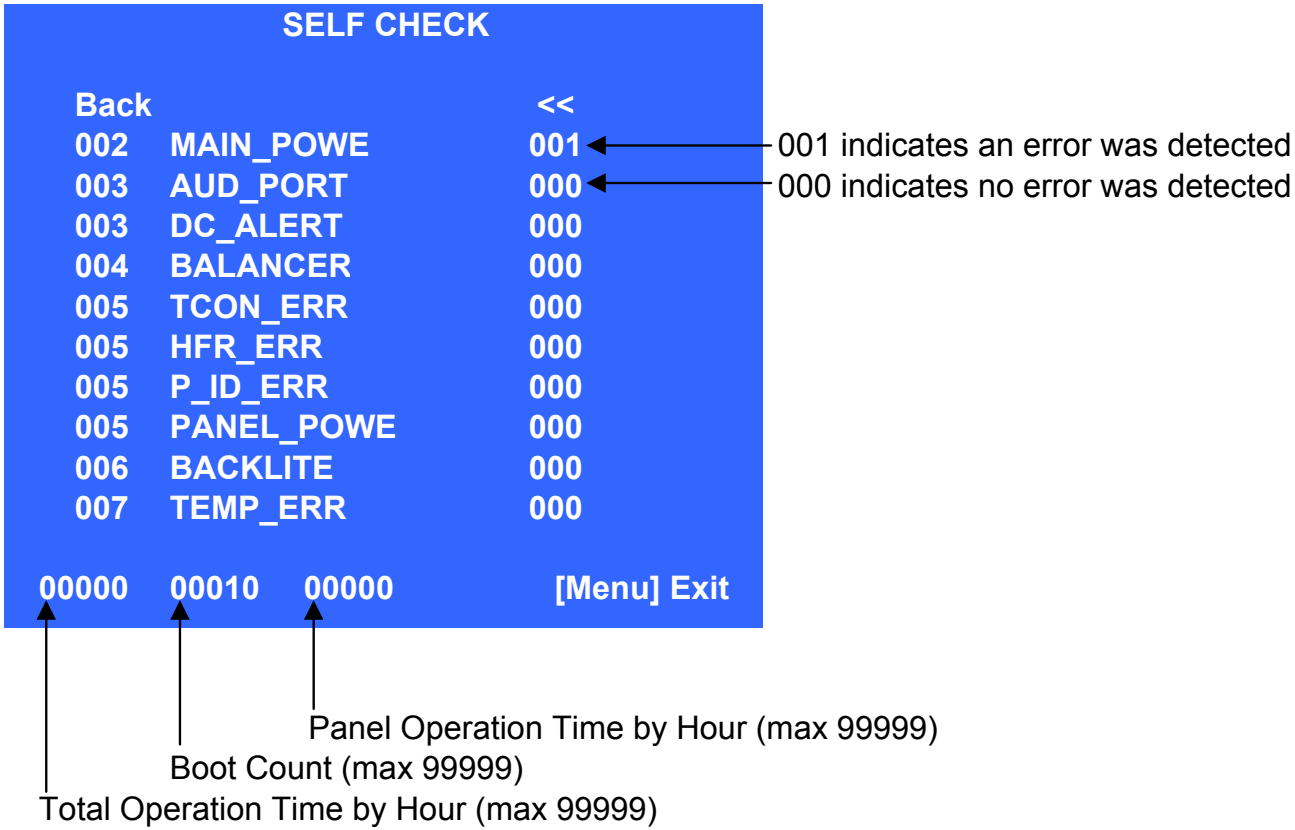
FIGURE 4-3. DIAGNOSTIC TABLE

NOTE: To provide information to customers regarding how to use their TV features or FAQs, refer the customer to the Sony esupport webstie at http://esupport.sony.com/.

VIEWING THE SELF CHECK DIAGNOSTIC HISTORY

It is possible to bring up past occurrences of a failure for confirmation on the Self Check diagnostic history screen. This feature is useful for failures which are intermittent or when the customer is not sure what is causing the television to shut down.

1. 1. TV must be in standby mode. (Power off).
2. Press the following buttons on the Remote Commander within a second of each other:
   DISPLAY → Channel 5 → Volume - → POWER.
   * NOTE: This differs from accessing Service Adjustments Mode (Volume +)



CLEARING THE SELF CHECK DIAGNOSTIC LIST

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic history after you have completed the repairs to be sure you have cleared the result display to “0”.

1. To clear the Error history and Error count: Press the Channel [8] ➡ Channel [0].

To clear the Panel operation time: Press the Channel [7] ➡ Channel [0].

EXITING THE SELF CHECK DIAGNOSTIC SCREEN

1. To exit the Self Diagnostic Self Check screen, turn off the power to the TV by pressing the POWER button on the remote or the POWER button on the TV.

TEST POINTS

Figure 5-5. Power and Control Block Diagram on page 35 contains the board-to-board connector and pin information to identify voltages, signal and control lines for troubleshooting purposes. All critical voltages and control signals are easily accessed at the power supply board. Use this drawing in conjunction with the previously discussed troubleshooting techniques and flowcharts availalbe in Section 5 - Flow Charts and Diagrams on page 31 for testing operating voltages and control signals.

SECTION 5 - FLOW CHARTS AND DIAGRAMS

VIDEO INFORMATION

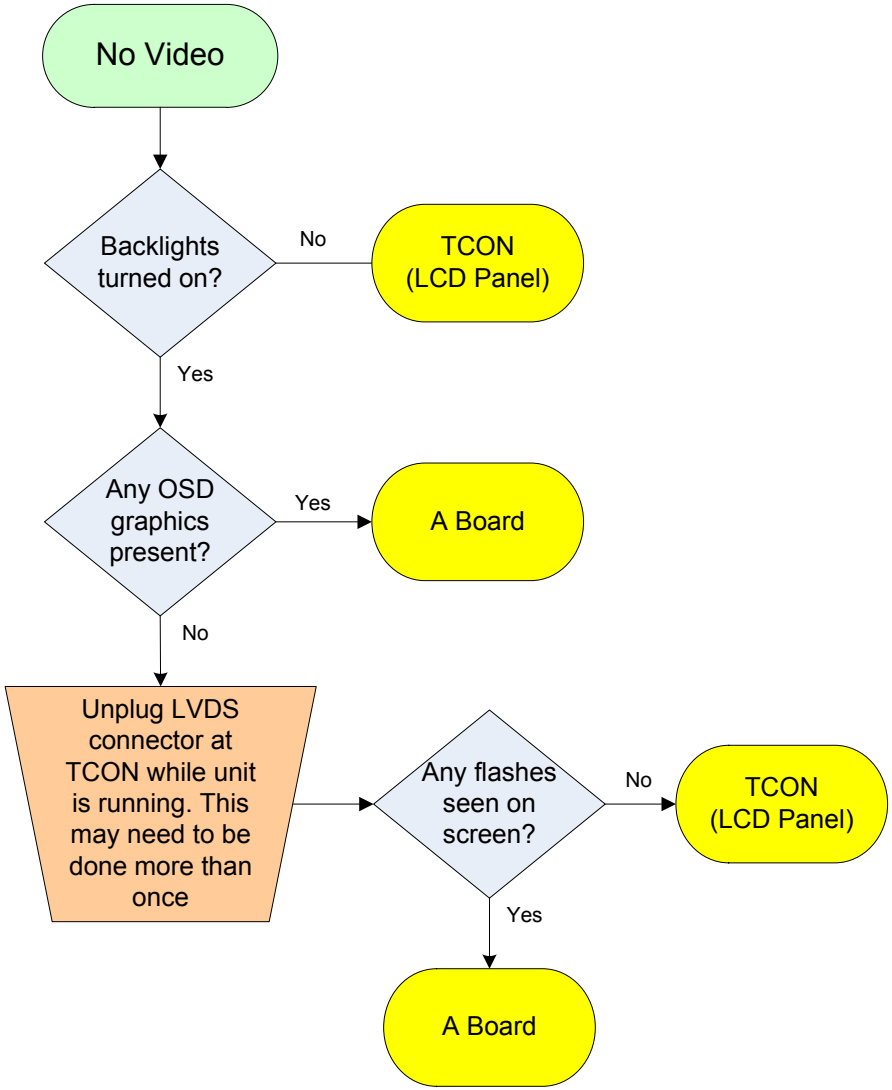


FIGURE 5-1. NO VIDEO FLOWCHART

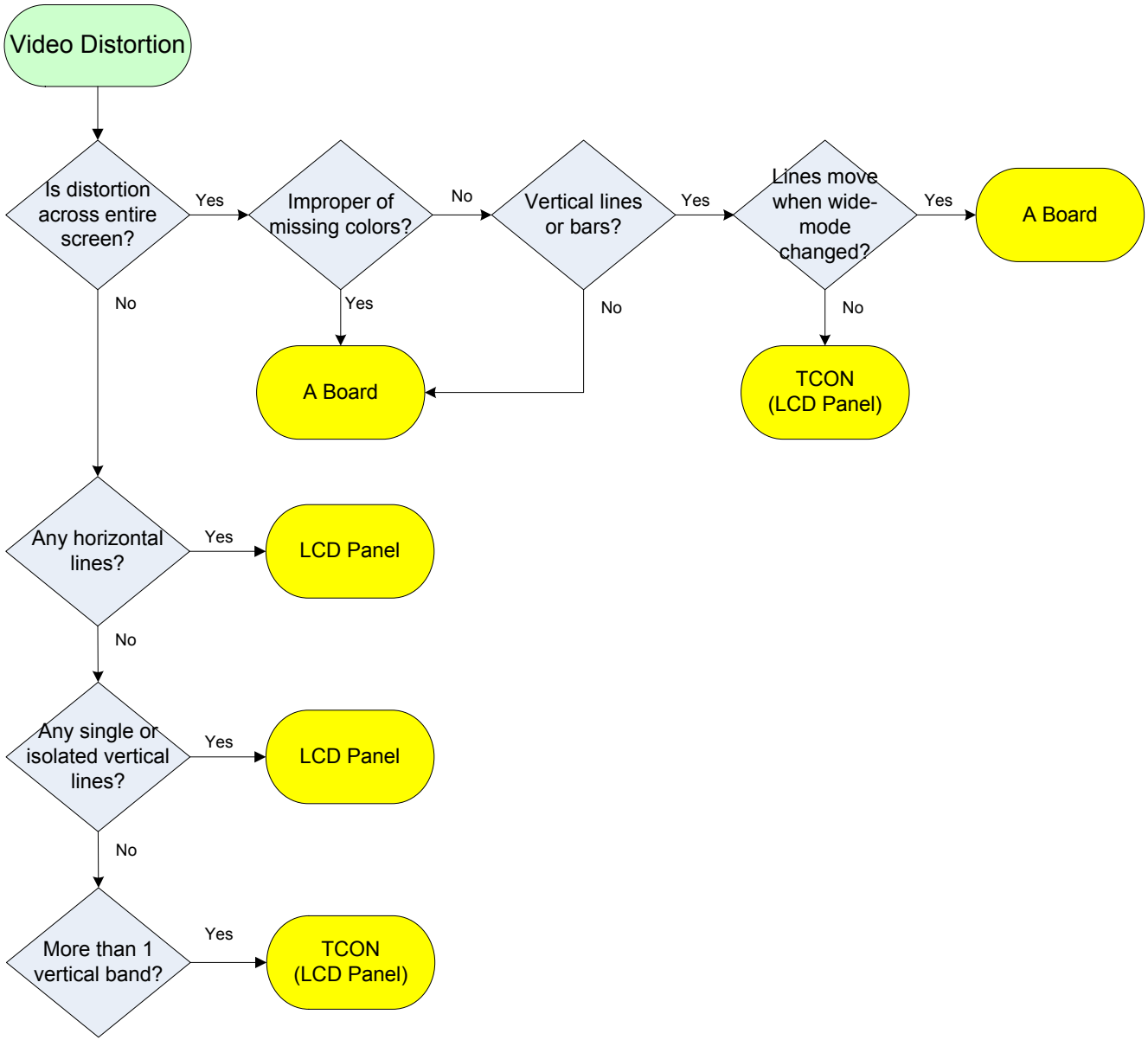


FIGURE 5-2. VIDEO DISTORTION FLOWCHART

POWER SUPPLY INFORMATION

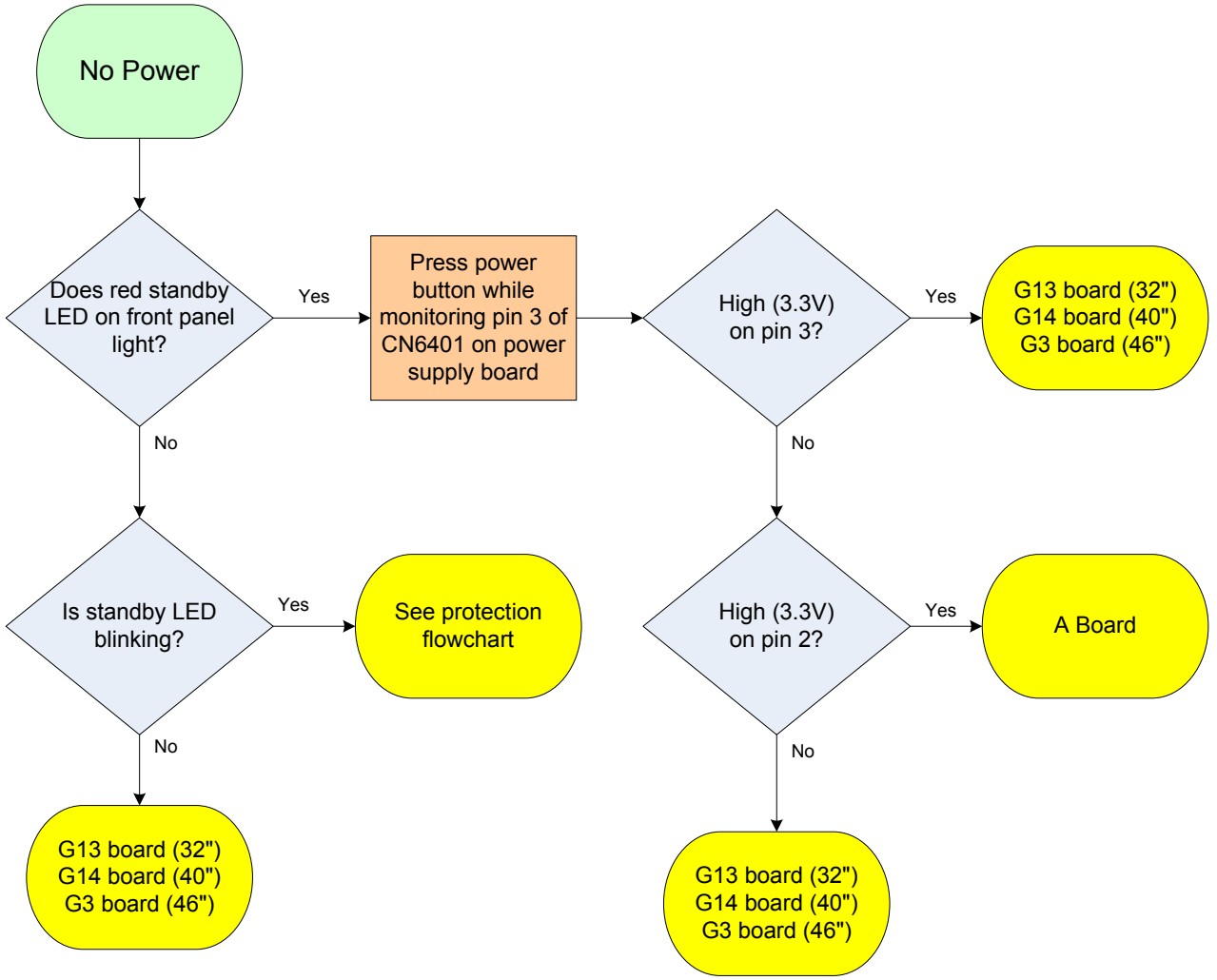


FIGURE 5-3. POWER SUPPLY FLOWCHART

PROTECTION INFORMATION

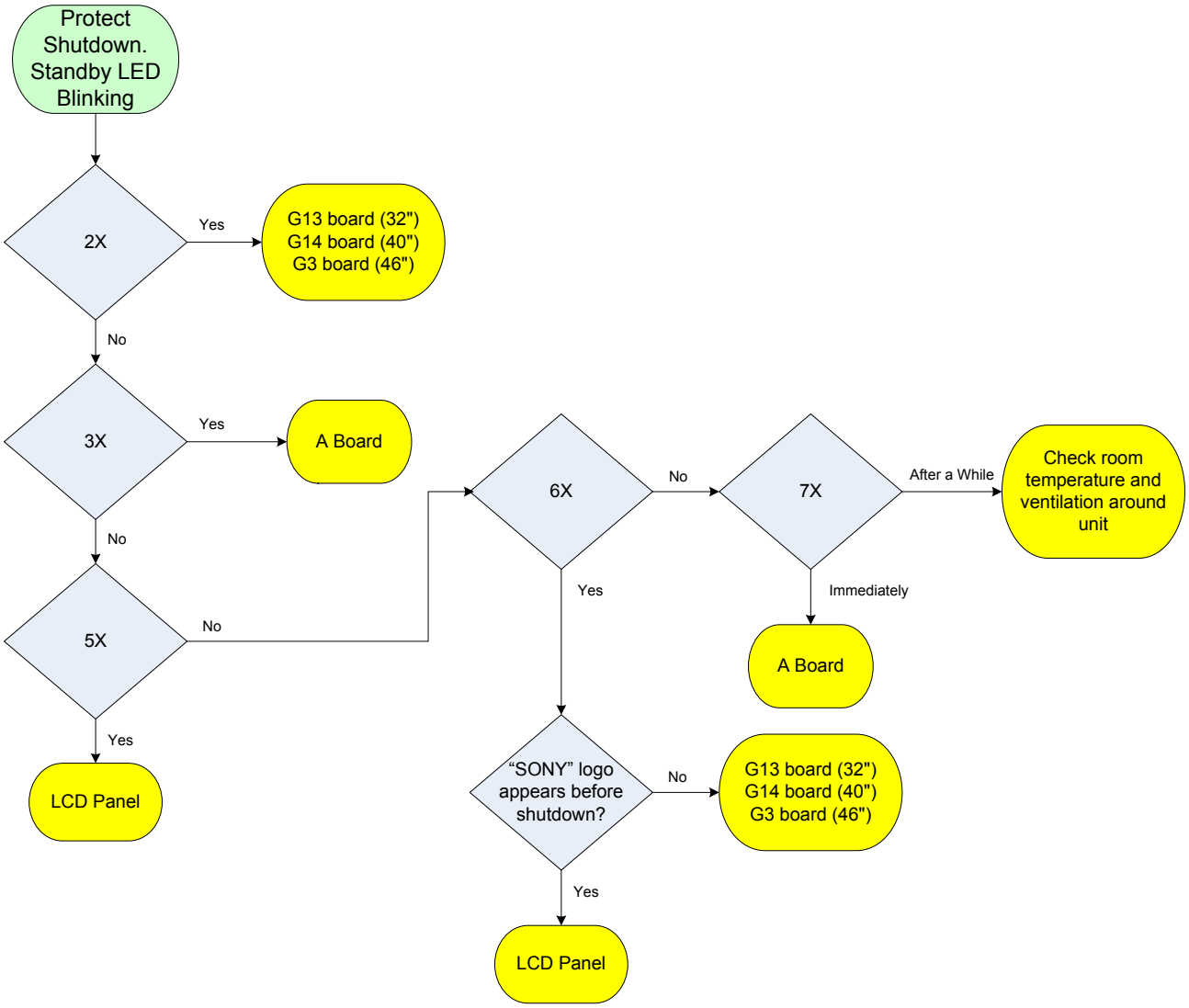


FIGURE 5-4. PROTECTION SHUTDOWN FLOWCHART

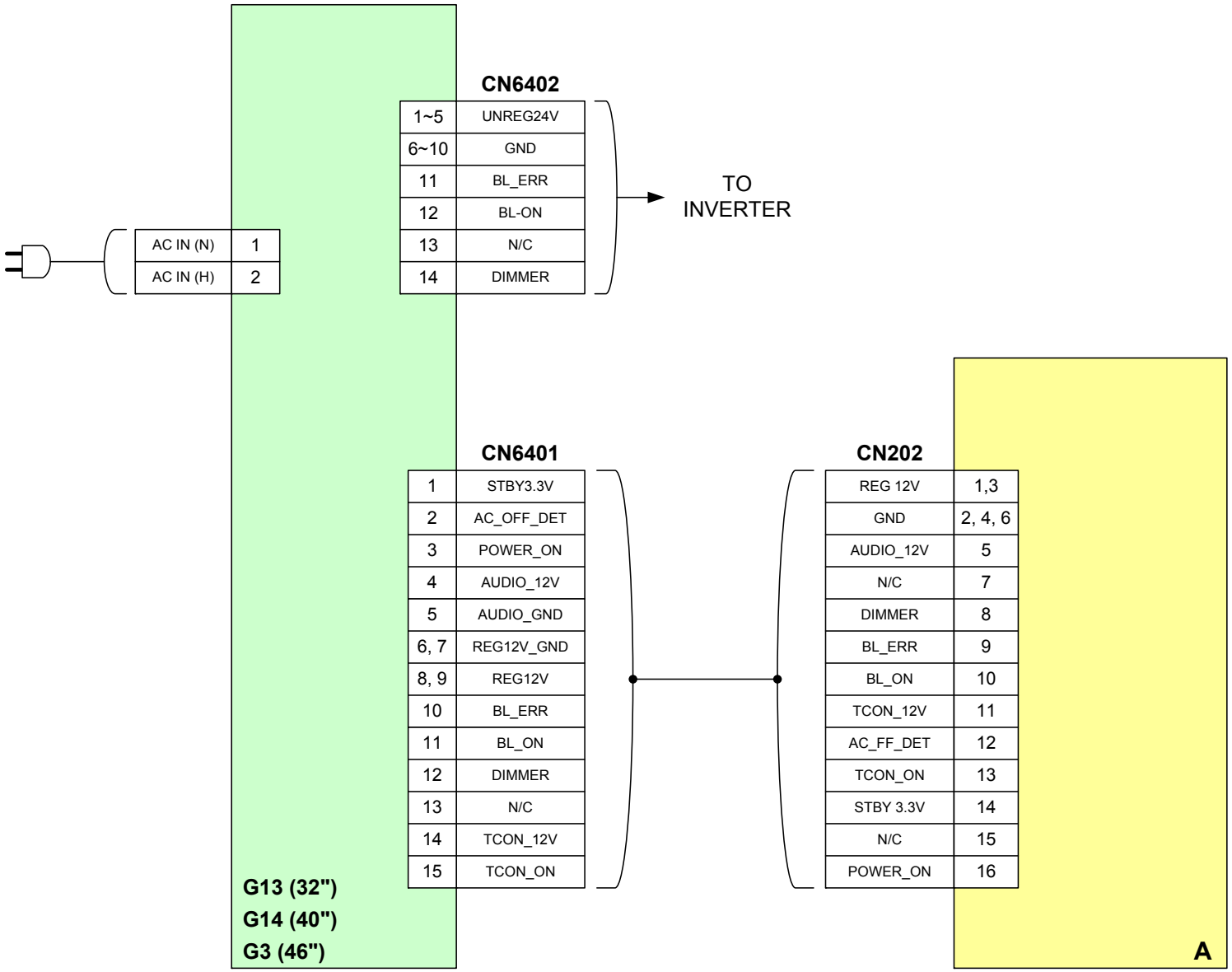


FIGURE 5-5. POWER AND CONTROL BLOCK DIAGRAM

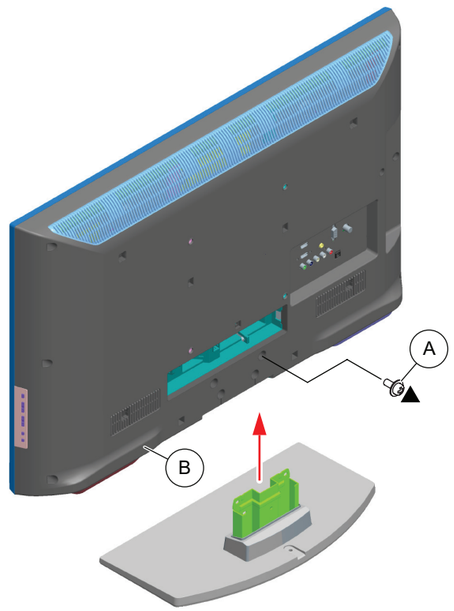
SECTION 6 - DISASSEMBLY/PART NUMBER INFORMATION

TABLE-TOP STAND ASSEMBLY REMOVAL

FOR SERIAL RANGES LISTED BELOW:

KDL-32BX320	**6000001 - 7400000**
KDL-32BX321	**7100001 - 7400000**
KDL-32BX420	**6000001 - 7200000**
KDL-32BX421	**6000001 - 7200000**
KDL-40BX420	**6000001 - 7400000**
KDL-40BX421	**6000001 - 7200000**
KDL-46BX420	**6000001 - 7400000**
KDL-46BX421	**6000001 - 7100000**

Ⓐ Remove 4 screws from Table-Top Stand Assembly
Ⓑ Lift up TV set to detach from Table-Top Stand Assembly



Components not identified by a part number or description are not stocked because they are seldom required for routine service.

The component parts of an assembly are indicated by the reference numbers in the far right column of the parts list and within the dotted lines of the diagram.

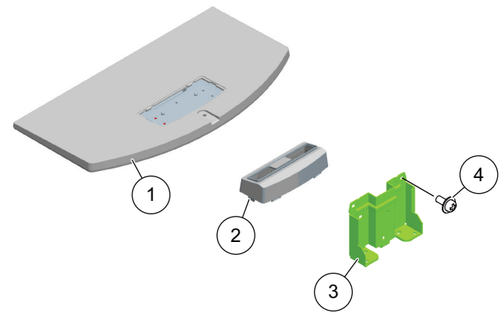
* Items marked with an asterisk are not stocked since they are seldom required for routine service. Expect some delay when ordering these components.

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

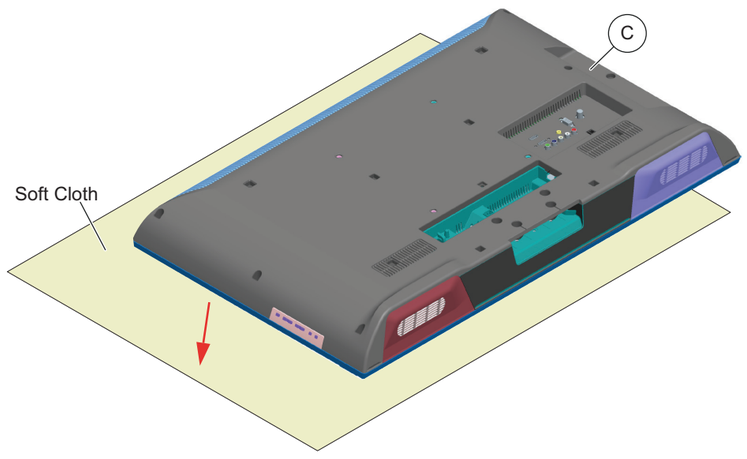
NOTE: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

NOTE: The components identified by a red outline and a 🔒 mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced.
See Appendix A: Encryption Key Components in the back of this manual.

(Check the Sony Authorized Servicer Portal at www.sony.com/asp for any additional service related issues for this model.)



Ⓒ Gently place the TV set face down onto a soft cloth

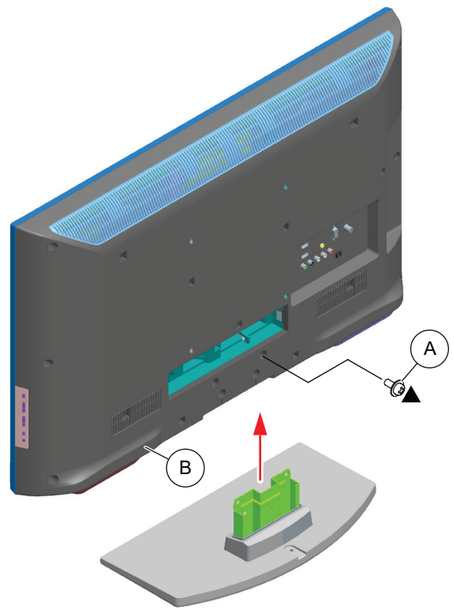


REF. NO.	PART NO.	DESCRIPTION [ASSEMBLY INCLUDES]
1	X-2581-429-1	BASE (M3B) ASSEMBLY (FOR US/CND) (KDL-32BX320/32BX420/32BX421 ONLY)
1	X-2546-085-2	BASE (M5B) ASSEMBLY (FOR MX) (KDL-32BX321/32BX421 ONLY)
1	X-2581-430-1	BASE (ML3B) ASSEMBLY (KDL-40BX420/40BX421 ONLY)
1	X-2581-431-1	STAND ASSEMBLY (L3B) (KDL-46BX420/46BX421 ONLY)
2	4-166-867-01	COVER, NECK (M3B) (KDL-32BX320/32BX321/32BX420/32BX421 ONLY)
2	4-166-871-01	COVER, NECK (ML3B) (KDL-40BX420/40BX421/46BX420/46BX421 ONLY)
3	4-166-864-01	NECK (M3B) (KDL-32BX320/32BX321/32BX420/32BX421 ONLY)
3	4-166-868-01	NECK (ML3B) (KDL-40BX420/40BX421/46BX420/46BX421 ONLY)
4	2-580-608-01	SCREW, +PSW M5X16 (SCREWS TO ATTACH TABLE-TOP STAND TO LCD TV For product protection and safety reasons, Sony strongly recommends that you use the screws provided with the TV CAUTION: These screws cannot be used to secure the TV to the Wall Mount Brackets
▲	2-580-608-01	SCREW, +PSW M5X16

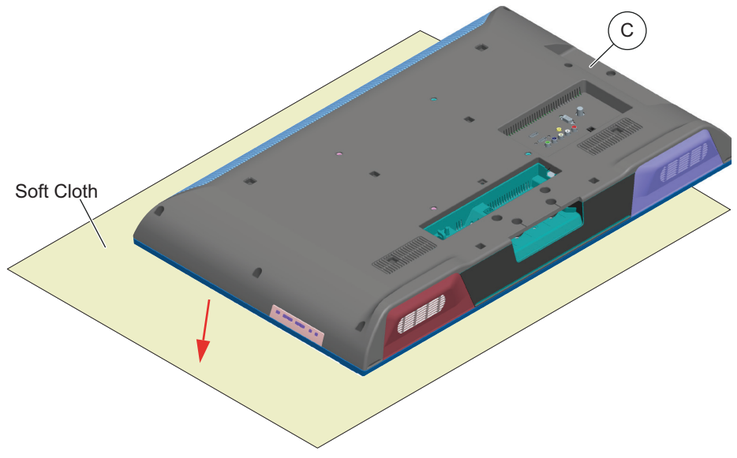
FOR SERIAL RANGES LISTED BELOW:

KDL-32BX320	3000001 - 3800000
KDL-32BX320	5000001 - 5500000
KDL-32BX321	5000001 - 5500000
KDL-32BX420	3000001 - 3800000
KDL-32BX420	5000001 - 5300000
KDL-32BX421	3000001 - 3800000
KDL-32BX421	5000001 - 5300000
KDL-40BX420	3000001 - 3800000
KDL-40BX420	5000001 - 5500000
KDL-40BX421	3000001 - 3800000
KDL-40BX421	5000001 - 5300000

Ⓐ Remove 4 screws from Table-Top Stand Assembly
Ⓑ Lift up TV set to detach from Table-Top Stand Assembly



Ⓒ Gently place the TV set face down onto a soft cloth



NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

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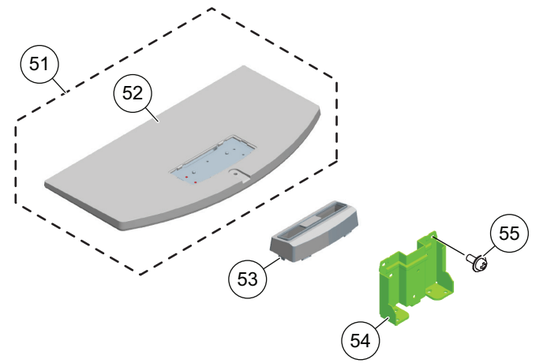
NOTE: The components identified by a red outline and a 🔒 mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced.
See Appendix A: Encryption Key Components in the back of this manual.

(Check the Sony Authorized Servicer Portal at www.sony.com/asp for any additional service related issues for this model.)



REF. NO.	PART NO.	DESCRIPTION [ASSEMBLY INCLUDES]
51	X-2581-429-1	BASE (M3B) ASSEMBLY (FOR US/CND) (KDL-32BX320/32BX420/32BX421 ONLY)
51	X-2580-731-1	BASE (M5B) ASSEMBLY (FOR MX) (KDL-32BX321/32BX421 ONLY)
51	X-2581-430-1	BASE (ML3B) ASSEMBLY (KDL-40BX420/40BX421 ONLY)
51	X-2580-732-1	BASE (ML5B) ASSEMBLY (KDL-40BX421 ONLY)
52	4-166-866-01	COVER, STAND (M3B) (FOR US/CND) [51] (KDL-32BX320/32BX420/32BX421 ONLY)
52	4-273-641-01	COVER, STAND (M5B) (FOR MX) [51] (KDL-32BX321/32BX421 ONLY)
52	4-166-870-01	COVER, STAND (ML3B) [51] (KDL-40BX420/40BX421 ONLY)
52	4-266-672-01	COVER, STAND (ML5B) [51] (KDL-40BX421 ONLY)

REF. NO.	PART NO.	DESCRIPTION [ASSEMBLY INCLUDES]
53	4-166-867-01	COVER, NECK (M3B) (KDL-32BX320/32BX321/32BX420/32BX421 ONLY)
53	4-166-871-01	COVER, NECK (ML3B) (KDL-40BX420/40BX421 ONLY)
54	4-166-864-01	NECK (M3B) (KDL-32BX320/32BX321/32BX420/32BX421 ONLY)
54	4-166-868-01	NECK (ML3B) (KDL-40BX420/40BX421 ONLY)
55	2-580-608-01	SCREW, +PSW M5X16 (SCREWS TO ATTACH TABLE-TOP STAND TO LCD TV) For product protection and safety reasons, Sony strongly recommends that you use the screws provided with the TV CAUTION: These screws cannot be used to secure the TV to the Wall Mount Brackets
▲	2-580-608-01	SCREW, +PSW M5X16

REAR COVER AND SPEAKERS REMOVAL

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

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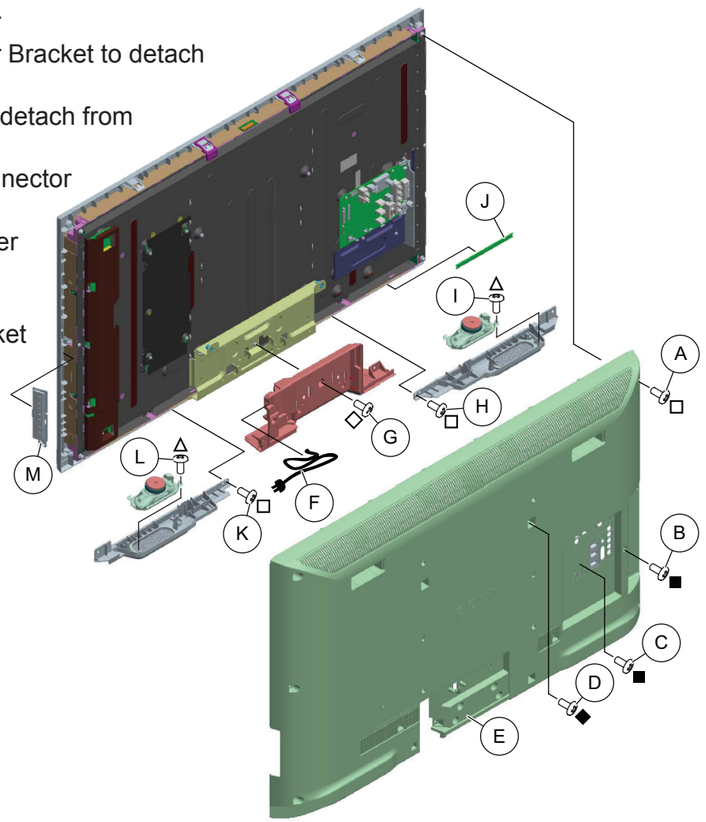
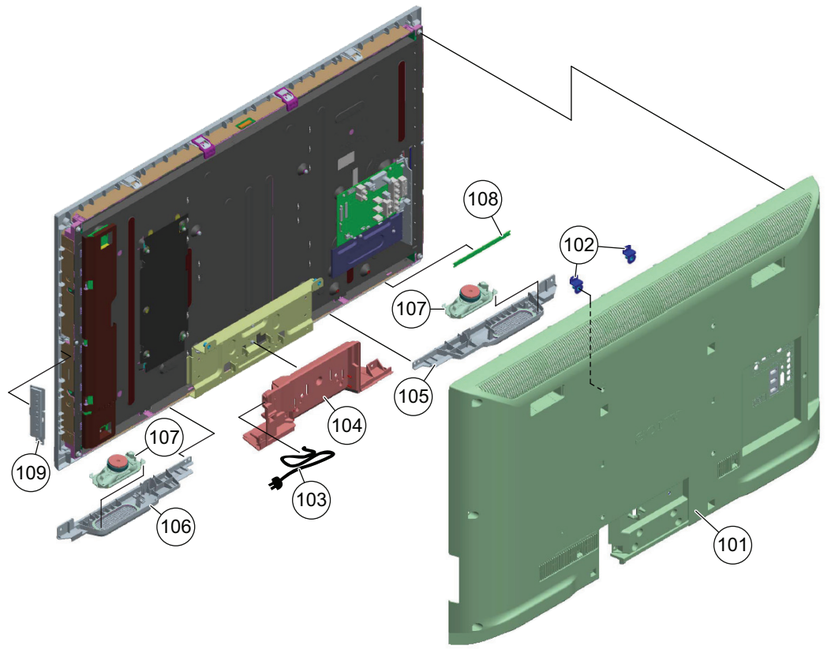
KDL-32BX320/32BX321/32BX420/32BX421 ONLY

FOR SERIAL RANGES LISTED BELOW:

KDL-32BX320	**6000001 - 7400000**
KDL-32BX321	**7100001 - 7400000**
KDL-32BX420	**6000001 - 7200000**
KDL-32BX421	**6000001 - 7200000**

Ⓐ Remove 9 screws from Rear Cover
Ⓑ Remove 1 screw from Side Bracket position
Ⓒ Remove 1 screw from Terminal Area position
Ⓓ Remove 2 screws from Rear Cover
Ⓔ Gently lift up Rear Cover from bottom side to detach from Bezel
Ⓕ Lift up AC Power Cord and disconnect 1 connector from G13 Board to detach from Under Cover
Ⓖ Remove 1 screw from Under Cover
Ⓗ Remove 1 screw from Left Speaker Bracket to detach from Bezel
Ⓘ Remove 2 screws from Speaker to detach from Left Speaker Bracket
Ⓙ Release clips and disconnect 1 connector to detach H Board from LED Guide
Ⓚ Remove 1 screw from Right Speaker Brackets to detach from Bezel
Ⓛ Remove 2 screws from Speaker to detach from Right Speaker Bracket
Ⓜ Lift up Switch Unit and disconnect 1 connector to detach from Bezel





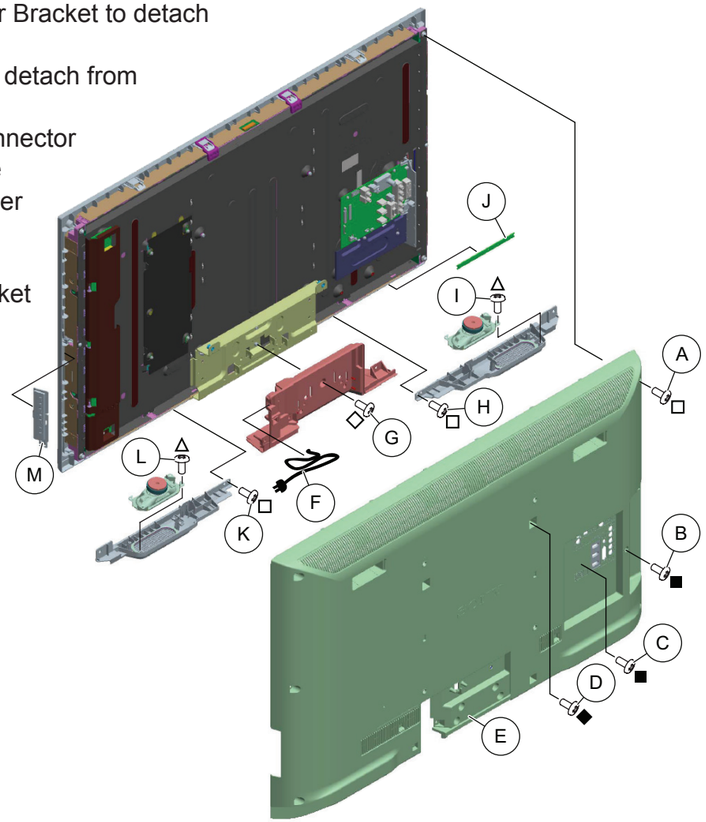
REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
101	4-270-691-11	REAR COVER (GW32) (KDL-32BX320/32BX321/32BX420 ONLY) (KDL-32BX421 FOR MX ONLY)	
101	4-270-691-01	REAR COVER (GW32) (KDL-32BX421 FOR US/CND ONLY)	
102	4-266-658-01	BRACKET, VESA (M6) (GW)	[101]
⚠ 103	1-838-980-11	POWER SUPPLY CORD (WITH CORE) (KDL-32BX320/32BX321/32BX420/32BX421 ONLY	
104	4-264-311-01	COVER, UNDER (GW26) (KDL-32BX320/32BX321/32BX420/32BX421 ONLY)	

REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
105	4-264-313-01	BRACKET, SP (GW32L) (KDL-32BX320/32BX321/32BX420/32BX421 ONLY)	
106	4-264-312-01	BRACKET, SP (GW32R) (KDL-32BX320/32BX321/32BX420/32BX421 ONLY)	
107	1-858-572-11	LOUDSPEAKER (4.0X10.0CM)	
108	1-857-898-21	H BOARD, MOUNTED	
109	1-489-627-11	SWITCH UNIT	
△	7-685-647-79	SCREW, +BVTP2 3X12	
■	7-685-648-79	SCREW, +BVTP 3X12 TYPE2 IT-3	
□	2-580-640-01	SCREW, +BVTP2 4X16	
◆	2-580-595-01	SCREW, +PSW M3X12	
◇	2-580-600-01	SCREW, +PSW M4X8	

FOR SERIAL RANGES LISTED BELOW:

KDL-32BX320	**3000001 - 3800000**
KDL-32BX320	**5000001 - 5500000**
KDL-32BX321	**5000001 - 5500000**
KDL-32BX420	**3000001 - 3800000**
KDL-32BX420	**5000001 - 5300000**
KDL-32BX421	**3000001 - 3800000**
KDL-32BX421	**5000001 - 5300000**

Ⓐ Remove 9 screws from Rear Cover
Ⓑ Remove 1 screw from Side Bracket position
Ⓒ Remove 1 screw from Terminal Area position
Ⓓ Remove 2 screws from Rear Cover
Ⓔ Gently lift up Rear Cover from bottom side to detach from Bezel
Ⓕ Lift up AC Power Cord and disconnect 1 connector from G13 Board to detach from Under Cover
Ⓖ Remove 1 screw from Under Cover
Ⓗ Remove 1 screw from Left Speaker Bracket to detach from Bezel
Ⓘ Remove 2 screws from Speaker to detach from Left Speaker Bracket
Ⓙ Release clips and disconnect 1 connector to detach H Board from LED Guide
Ⓚ Remove 1 screw from Right Speaker Brackets to detach from Bezel
Ⓛ Remove 2 screws from Speaker to detach from Right Speaker Bracket
Ⓜ Lift up Switch Unit and disconnect 1 connector to detach from Bezel



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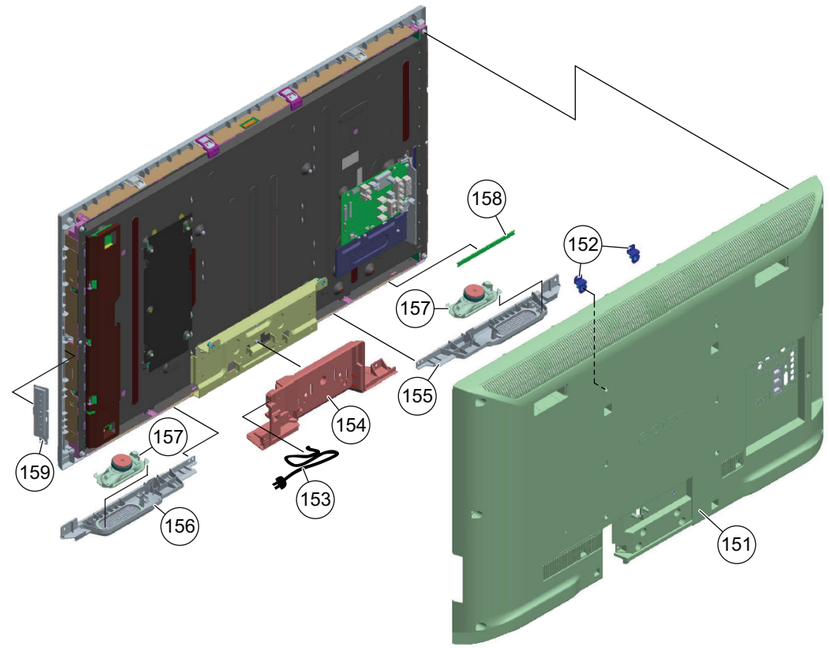

REF. NO.	PART NO.	DESCRIPTION [ASSEMBLY INCLUDES]
151	4-288-558-11	REAR COVER (GF32) (KDL-32BX320/32BX321/32BX420 ONLY) (KDL-32BX421 FOR MX ONLY)
151	4-288-558-01	REAR COVER (GF32) (KDL-32BX421 FOR US/CND ONLY)
152	4-266-658-01	BRACKET, VESA (M6) (GW) [151]
⚠ 153	1-838-980-11	POWER SUPPLY CORD (WITH CORE) (KDL-32BX320/32BX321/32BX420/32BX421 ONLY)
154	4-264-311-01	COVER, UNDER (GW26) (KDL-32BX320/32BX321/32BX420/32BX421 ONLY)
155	4-264-313-01	BRACKET, SP (GW32L) (KDL-32BX320/32BX321/32BX420/32BX421 ONLY)
156	4-264-312-01	BRACKET, SP (GW32R) (KDL-32BX320/32BX321/32BX420/32BX421 ONLY)
157	1-858-572-11	LOUDSPEAKER (4.0X10.0CM)
158	1-895-019-11	H BOARD, MOUNTED
159	1-489-627-11	SWITCH UNIT
△	7-685-647-79	SCREW, +BVTP2 3X12
■	7-685-648-79	SCREW, +BVTP 3X12 TYPE2 IT-3
□	2-580-640-01	SCREW, +BVTP2 4X16
◆	2-580-595-01	SCREW, +PSW M3X12
◇	2-580-600-01	SCREW, +PSW M4X8

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

NOTE: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

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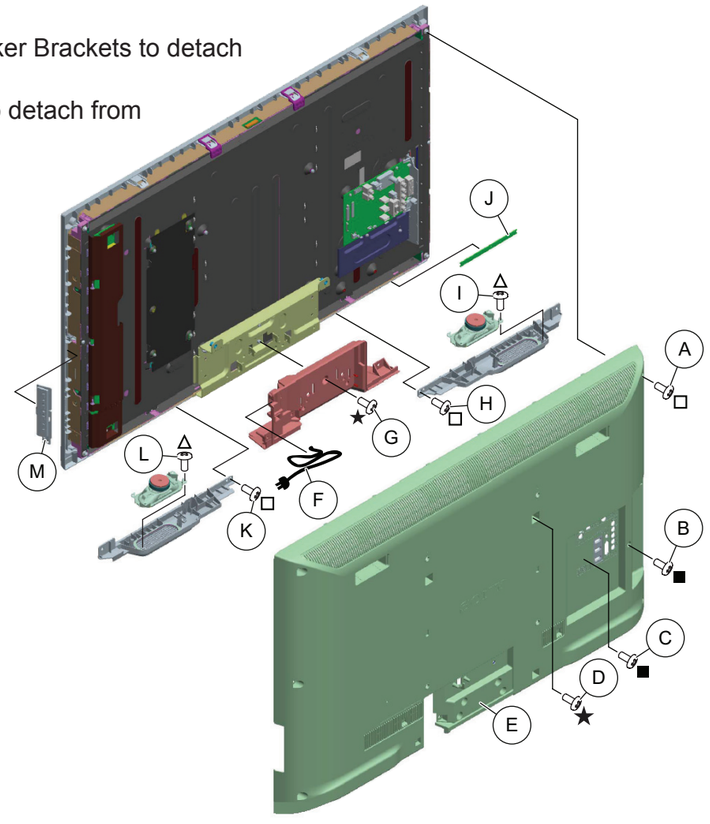
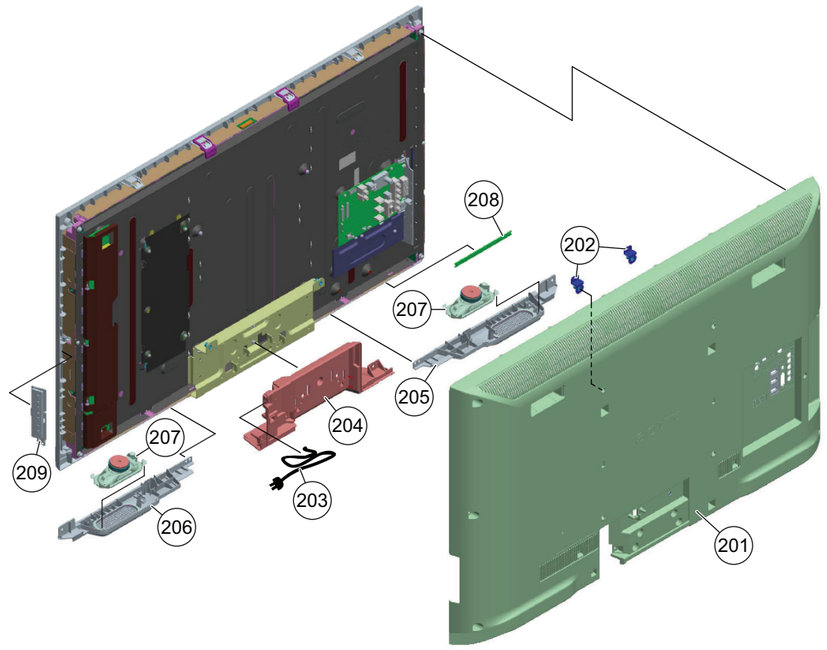
KDL-40BX420/40BX421 ONLY

FOR SERIAL RANGES LISTED BELOW:

KDL-40BX420 6000001 - 7400000
KDL-40BX421 6000001 - 7200000

Ⓐ Remove 7 screws from Rear Cover
Ⓑ Remove 1 screw from Side Bracket position
Ⓒ Remove 1 screw from Terminal Area position
Ⓓ Remove 4 screws from Rear Cover
Ⓔ Gently lift up Rear Cover from bottom side to detach from Bezel
Ⓕ Lift up AC Power Cord and disconnect 1 connector from G14 Board to detach from Under Cover
Ⓖ Remove 1 screw from Under Cover
Ⓗ Remove 1 screw from Left Speaker Bracket to detach from Bezel
Ⓘ Remove 2 screws from Speaker to detach from Left Speaker Bracket
Ⓙ Release clips and disconnect 1 connector to detach H Board from LED Guide
Ⓚ Remove 1 screw from Right Speaker Brackets to detach from Bezel
Ⓛ Remove 2 screws from Speaker to detach from Right Speaker Bracket
Ⓜ Lift up Switch Unit and disconnect 1 connector to detach from Bezel



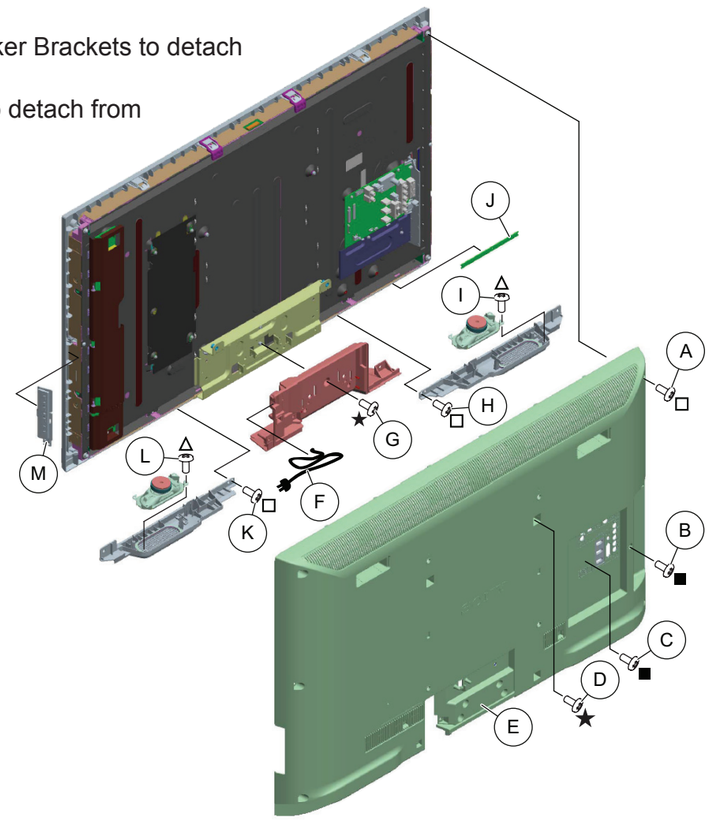


REF. NO.	PART NO.	DESCRIPTION [ASSEMBLY INCLUDES]
201	4-270-695-11	REAR COVER (GW40) (KDL-40BX420 ONLY) (KDL-40BX421 FOR MX ONLY)
201	4-270-695-01	REAR COVER (GW40) (KDL-40BX421 FOR US/CND ONLY)
202	4-266-658-01	BRACKET, VESA (M6) (GW) [201]
⚠ 203	1-838-981-11	POWER SUPPLY CORD (WITH CORE) (KDL-40BX420/40BX421 ONLY)
204	4-264-314-01	COVER, UNDER (GW37) (KDL-40BX420/40BX421 ONLY)
205	4-264-316-01	BRACKET, SP (GW40L) (KDL-40BX420/40BX421 ONLY)
206	4-264-315-01	BRACKET, SP (GW40R) (KDL-40BX420/40BX421 ONLY)
207	1-858-572-11	LOUDSPEAKER (4.0X10.0CM)
208	1-857-898-21	H BOARD, MOUNTED
209	1-489-627-11	SWITCH UNIT
△	7-685-647-79	SCREW, +BVTP2 3X12
■	7-685-648-79	SCREW, +BVTP 3X12 TYPE2 IT-3
□	2-580-640-01	SCREW, +BVTP2 4X16
★	4-159-298-01	SCREW, +PSW M4X10

FOR SERIAL RANGES LISTED BELOW:

KDL-40BX420	**3000001 - 3800000**
KDL-40BX420	**5000001 - 5500000**
KDL-40BX421	**3000001 - 3800000**
KDL-40BX421	**5000001 - 5300000**

Ⓐ Remove 7 screws from Rear Cover
Ⓑ Remove 1 screw from Side Bracket position
Ⓒ Remove 1 screw from Terminal Area position
Ⓓ Remove 4 screws from Rear Cover
Ⓔ Gently lift up Rear Cover from bottom side to detach from Bezel
Ⓕ Lift up AC Power Cord and disconnect 1 connector from G14 Board to detach from Under Cover
Ⓖ Remove 1 screw from Under Cover
Ⓗ Remove 1 screw from Left Speaker Bracket to detach from Bezel
Ⓘ Remove 2 screws from Speaker to detach from Left Speaker Bracket
Ⓙ Release clips and disconnect 1 connector to detach H Board from LED Guide
Ⓚ Remove 1 screw from Right Speaker Brackets to detach from Bezel
Ⓛ Remove 2 screws from Speaker to detach from Right Speaker Bracket
Ⓜ Lift up Switch Unit and disconnect 1 connector to detach from Bezel



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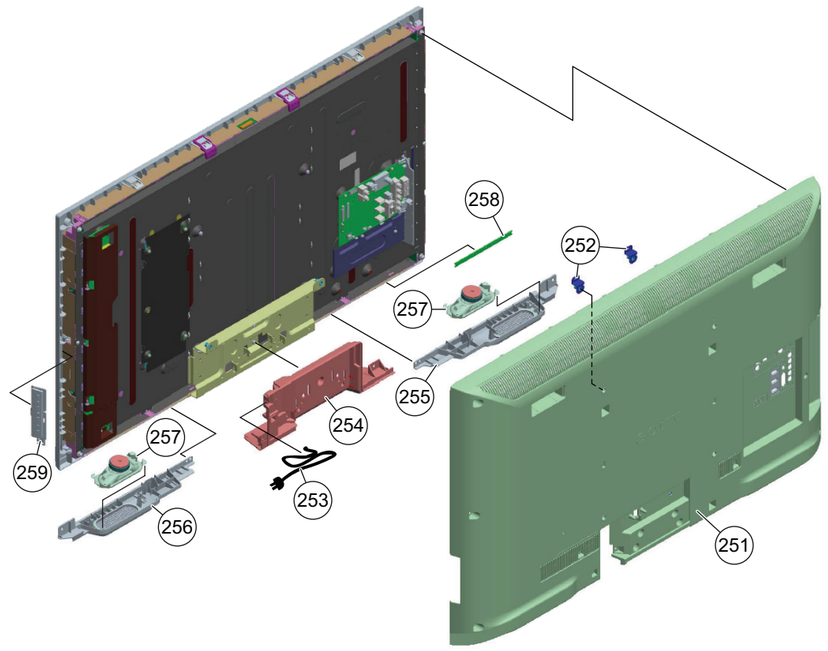
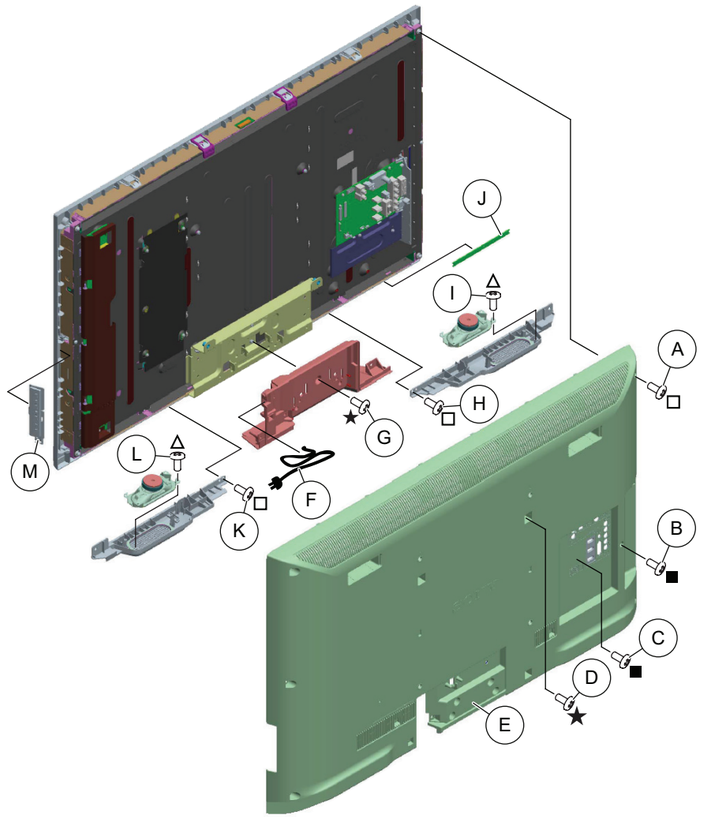


REF. NO.	PART NO.	DESCRIPTION [ASSEMBLY INCLUDES]
251	4-288-560-11	REAR COVER (GF40) (KDL-40BX420 ONLY) (KDL-40BX421 FOR MX ONLY)
251	4-288-560-01	REAR COVER (GF40) (KDL-40BX421 FOR US/CND ONLY)
252	4-266-658-01	BRACKET, VESA (M6) (GW) [251]
⚠ 253	1-838-981-11	POWER SUPPLY CORD (WITH CORE) (KDL-40BX420/40BX421 ONLY)
254	4-264-314-01	COVER, UNDER (GW37) (KDL-40BX420/40BX421 ONLY)

REF. NO.	PART NO.	DESCRIPTION [ASSEMBLY INCLUDES]
255	4-264-316-01	BRACKET, SP (GW40L) (KDL-40BX420/40BX421 ONLY)
256	4-264-315-01	BRACKET, SP (GW40R) (KDL-40BX420/40BX421 ONLY)
257	1-858-572-11	LOUDSPEAKER (4.0X10.0CM)
258	1-895-019-11	H BOARD, MOUNTED
259	1-489-627-11	SWITCH UNIT
△	7-685-647-79	SCREW, +BVTP2 3X12
■	7-685-648-79	SCREW, +BVTP 3X12 TYPE2 IT-3
□	2-580-640-01	SCREW, +BVTP2 4X16
★	4-159-298-01	SCREW, +PSW M4X10

KDL-46BX420/46BX421 ONLY

Ⓐ Remove 8 screws from Rear Cover
Ⓑ Remove 1 screw from Side Bracket position
Ⓒ Remove 1 screw from Terminal Area position
Ⓓ Remove 4 screws from Rear Cover
Ⓔ Gently lift up Rear Cover from bottom side to detach from Bezel
Ⓕ Lift up AC Power Cord and disconnect 1 connector from G3 Board to detach from Under Cover
Ⓖ Remove 1 screw from Under Cover
Ⓗ Remove 1 screw from Left Speaker Bracket to detach from Bezel
Ⓘ Remove 2 screws from Speaker to detach from Left Speaker Bracket
Ⓙ Release clips and disconnect 1 connector to detach H Board from LED Guide
Ⓚ Remove 1 screw from Right Speaker Brackets to detach from Bezel
Ⓛ Remove 2 screws from Speaker to detach from Right Speaker Bracket
Ⓜ Lift up Switch Unit and disconnect 1 connector to detach from Bezel

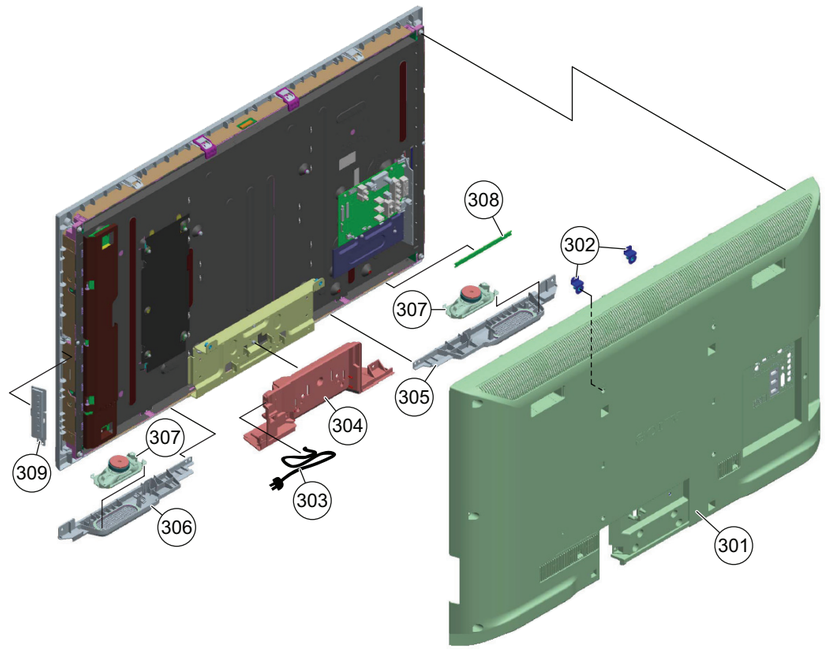


NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

NOTE: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

NOTE: The components identified by a red outline and a 🔒 mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced.
See Appendix A: Encryption Key Components in the back of this manual.

(Check the Sony Authorized Servicer Portal at www.sony.com/asp for any additional service related issues for this model.)



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
301	4-270-697-11	REAR COVER (GW46) (KDL-46BX420 ONLY)	
301	4-270-697-01	REAR COVER (GW46) (KDL-46BX421 ONLY)	
302	4-266-658-01	BRACKET, VESA (M6) (GW)	[301]
⚠ 303	1-838-981-11	POWER SUPPLY CORD (WITH CORE) (KDL-46BX420/46BX421 ONLY)	
304	4-266-609-01	COVER, UNDER (GW46) (KDL-46BX420/46BX421 ONLY)	

REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
305	4-266-611-01	BRACKET, SP (GW46L) (KDL-46BX420/46BX421 ONLY)	
306	4-266-610-01	BRACKET, SP (GW46R) (KDL-46BX420/46BX421 ONLY)	
307	1-858-572-11	LOUDSPEAKER (4.0X10.0CM)	
308	1-857-898-21	H BOARD, MOUNTED	
309	1-489-627-11	SWITCH UNIT	
△	7-685-647-79	SCREW, +BVTP2 3X12	
■	7-685-648-79	SCREW, +BVTP 3X12 TYPE2 IT-3	
□	2-580-640-01	SCREW, +BVTP2 4X16	
★	4-159-298-01	SCREW, +PSW M4X10	

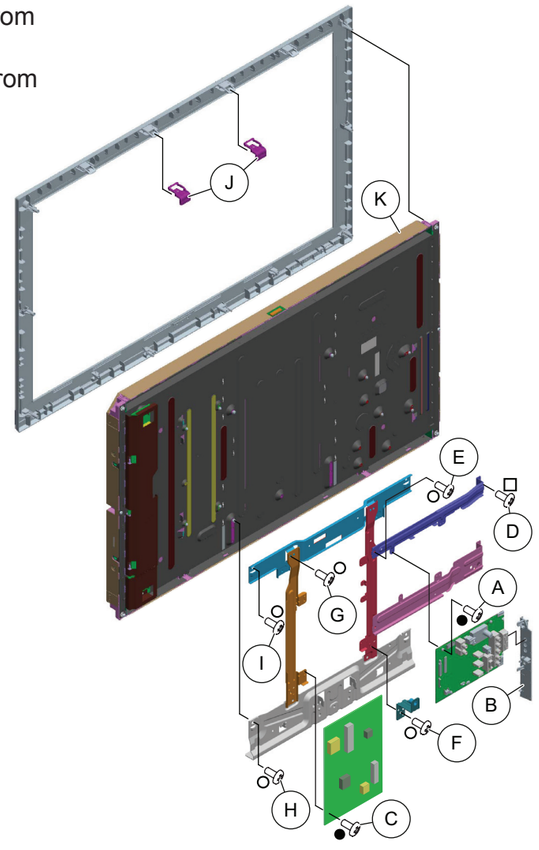
A (MAIN) BOARD, G13/G14/G3 (POWER SUPPLY) BOARD AND LCD PANEL REMOVAL

KDL-32BX320/32BX321 ONLY

FOR SERIAL RANGES LISTED BELOW:

KDL-32BX320	**6000001 - 7400000**
KDL-32BX321	**7100001 - 7400000**

Ⓐ Remove 4 screws and disconnect 5 connectors from A Board to detach from MB Brackets
Ⓑ Release 2 clips and slide-out Side Bracket to detach from A Board
Ⓒ Remove 4 screws and disconnect 3 connectors from G13 Board to detach from PSU Brackets
Ⓓ Remove 2 screws from MB Brackets to detach from Bezel
Ⓔ Remove 2 screws from MB Brackets to detach from PSU Bracket Left
Ⓕ Remove 2 screws from Vesa Brackets to detach from PSU Brackets
Ⓖ Remove 4 screws from PSU Brackets to detach from LCD Panel and Top Frame
Ⓗ Remove 2 screws from Bottom Frame to detach from LCD Panel
Ⓘ Remove 2 screws from Top Frame to detach from LCD Panel
Ⓙ Slide-out 2 Panel Brackets to detach from Bezel
Ⓚ Carefully lift up LCD Panel to remove from Bezel



NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

NOTE: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

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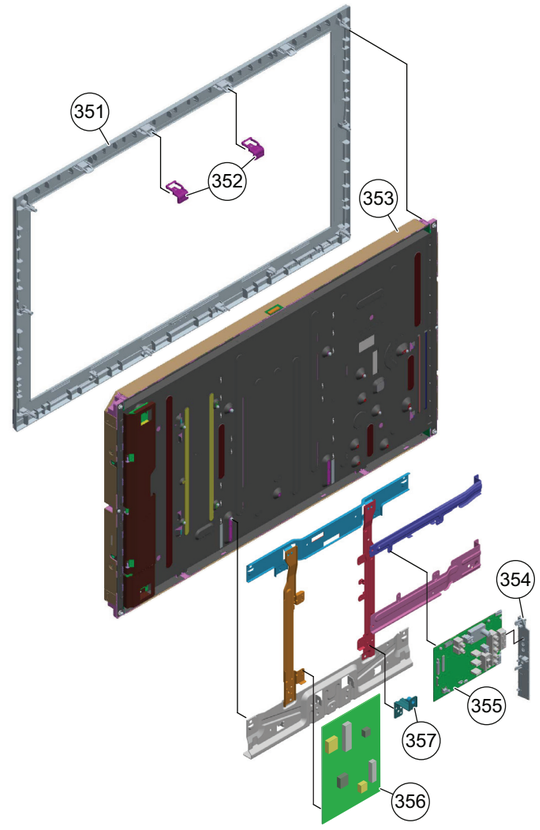


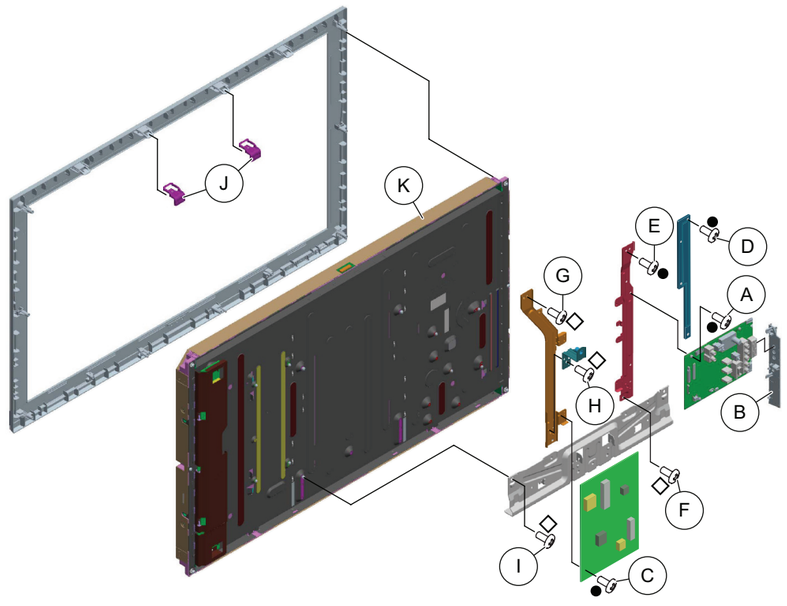
REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
351	4-270-690-11	BEZEL (GW32)	(KDL-32BX320/32BX321 ONLY)
352	4-264-319-01	SUPPORT, PANEL(C) (GW)	(KDL-32BX320/32BX321 ONLY)
353	NA	LCD PANEL	FOR ALL LCD PANEL AND TCON BOARD PART NUMBER INFORMATION REFER TO THE LCD PANELS SERVICE MANUAL
354	4-264-318-01	BRACKET, SIDE (US) (GW)	

REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
🔒 355	1-857-903-21	A BOARD, COMPLETE	(KDL-32BX320/32BX321 ONLY)
		AFTER REPLACING THE MAIN BOARD OR THE LCD PANEL, YOU MUST UPDATE THE SOFTWARE TO THE LATEST VERSION.	
356	1-474-297-12	G13 BOARD, COMPLETE	(KDL-32BX320/32BX321 ONLY)
* 357	4-266-636-01	BRACKET, VESA (GW32)	(KDL-32BX320/32BX321 ONLY)
□	2-580-640-01	SCREW, +BVTP2 4X16	
●	2-580-592-01	SCREW, +PSW M3X8	
○	2-580-599-01	SCREW, +PSW M4X6	

FOR SERIAL RANGES LISTED BELOW:

KDL-32BX320	**3000001 - 3800000**
KDL-32BX320	**5000001 - 5500000**
KDL-32BX321	**5000001 - 5500000**

Ⓐ Remove 4 screws and disconnect 5 connectors from A Board to detach from PSU and MB Brackets
Ⓑ Release 2 clips and slide-out Side Bracket to detach from A Board
Ⓒ Remove 4 screws and disconnect 3 connectors from G13 Board to detach from PSU Brackets
Ⓓ Remove 2 screws from MB Bracket to detach from LCD Panel
Ⓔ Remove 1 screw from PSU Bracket-Left to detach from LCD Panel
Ⓕ Remove 1 screw from PSU Bracket-Left to detach from Bottom Frame
Ⓖ Remove 2 screws from PSU Bracket-Right to detach from Bottom Frame and LCD Panel
Ⓗ Remove 2 screws from Vesa Brackets to detach from PSU Brackets
Ⓘ Remove 2 screws from Bottom Frame to detach from LCD Panel
Ⓙ Slide-out 2 Panel Brackets to detach from Bezel
Ⓚ Carefully lift up LCD Panel to remove from Bezel



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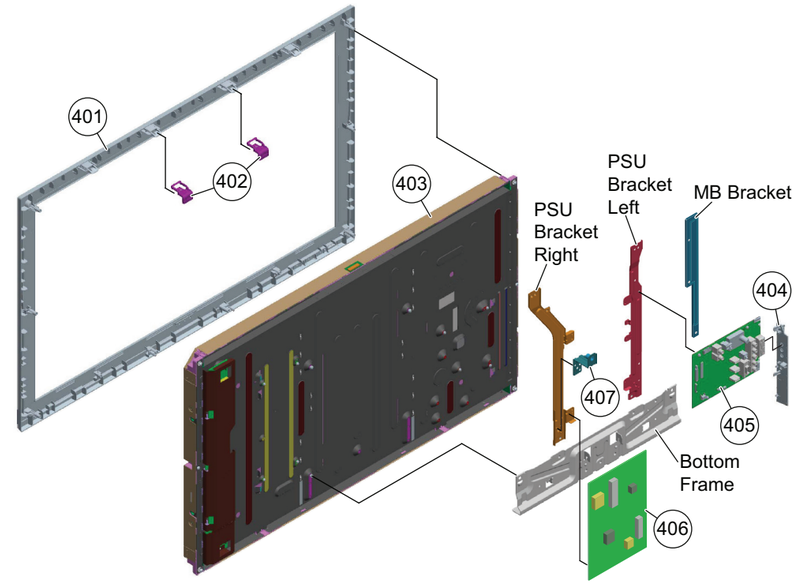

REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
401	4-288-557-01	BEZEL (GF32)	(KDL-32BX320/32BX321 ONLY)
402	4-264-319-01	SUPPORT, PANEL(C) (GW)	(KDL-32BX320/32BX321 ONLY)
403	NA	LCD PANEL	FOR ALL LCD PANEL AND TCON BOARD PART NUMBER INFORMATION REFER TO THE LCD PANELS SERVICE MANUAL
404	4-264-318-01	BRACKET, SIDE (US) (GW)	

REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
🔒 405	1-895-018-11	A BOARD, COMPLETE	(KDL-32BX320/32BX321 ONLY)
		AFTER REPLACING THE MAIN BOARD OR THE LCD PANEL, YOU MUST UPDATE THE SOFTWARE TO THE LATEST VERSION.	
406	1-474-297-12	G13 BOARD, COMPLETE	(KDL-32BX320/32BX321 ONLY)
407	4-266-636-01	BRACKET, VESA (GW32)	(KDL-32BX320/32BX321 ONLY)
◇	2-580-600-01	SCREW, +PSW M4X8	
●	2-580-592-01	SCREW, +PSW M3X8	

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

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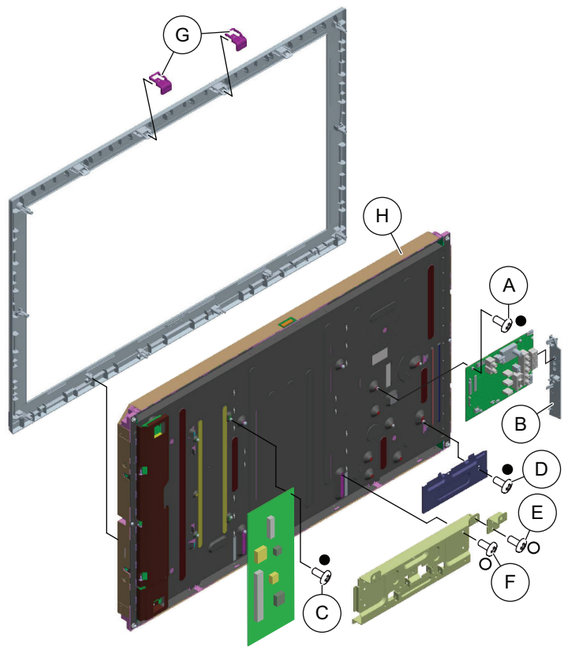
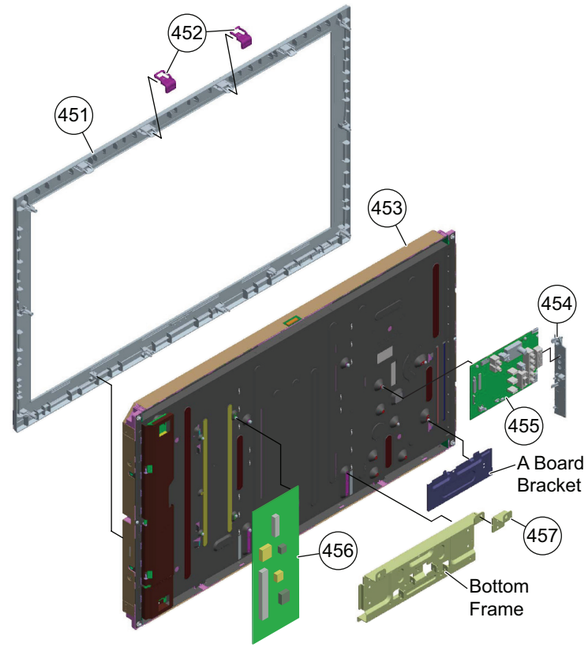
KDL-32BX420/32BX421 ONLY

FOR SERIAL RANGES LISTED BELOW:

KDL-32BX420 6000001 - 7200000
KDL-32BX421 6000001 - 7200000

Ⓐ Remove 4 screws and disconnect 5 connectors from A Board to detach from LCD Panel
Ⓑ Release 2 clips and slide-out Side Bracket to detach from A Board
Ⓒ Remove 4 screws and disconnect 3 connectors from G13 Board
Ⓓ Remove 2 screws from MB Bracket to detach from LCD Panel
Ⓔ Remove 2 screws from Vesa Brackets to detach from Bottom Frame
Ⓕ Remove 2 screws from Bottom Frame to detach from LCD Panel
Ⓖ Slide-out 2 Panel Brackets to detach from Bezel
Ⓗ Carefully lift up LCD Panel to remove from Bezel





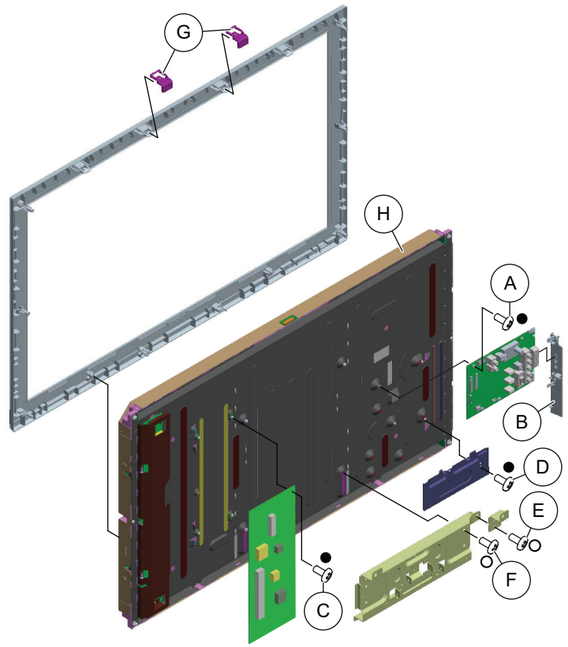
REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
451	4-270-690-11	BEZEL (GW32)	(KDL-32BX420/32BX421 ONLY)
452	4-165-056-01	PANEL SUPPORT (B)	(KDL-32BX420/32BX421 ONLY)
453	NA	LCD PANEL	FOR ALL LCD PANEL AND TCON BOARD PART NUMBER INFORMATION REFER TO THE LCD PANELS SERVICE MANUAL
454	4-264-318-01	BRACKET, SIDE (US) (GW)	
🔒 455	1-857-903-31	A BOARD, COMPLETE	(KDL-32BX420 ONLY) (KDL-32BX421 FOR MX ONLY)
		AFTER REPLACING THE MAIN BOARD OR THE LCD PANEL, YOU MUST UPDATE THE SOFTWARE TO THE LATEST VERSION.	

REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
🔒 455	1-857-903-41	A BOARD, COMPLETE	(KDL-32BX421 FOR US/CND ONLY)
		AFTER REPLACING THE MAIN BOARD OR THE LCD PANEL, YOU MUST UPDATE THE SOFTWARE TO THE LATEST VERSION.	
456	1-474-297-12	G13 BOARD, COMPLETE	(KDL-32BX420/32BX421 ONLY)
* 457	4-266-636-01	BRACKET, VESA (GW32)	(KDL-32BX420/32BX421 ONLY)
●	2-580-592-01	SCREW, +PSW M3X8	
○	2-580-599-01	SCREW, +PSW M4X6	

FOR SERIAL RANGES LISTED BELOW:

KDL-32BX420	**3000001 - 3800000**
KDL-32BX420	**5000001 - 5300000**
KDL-32BX421	**3000001 - 3800000**
KDL-32BX421	**5000001 - 5300000**

Ⓐ Remove 4 screws and disconnect 5 connectors from A Board to detach from LCD Panel
Ⓑ Release 2 clips and slide-out Side Bracket to detach from A Board
Ⓒ Remove 4 screws and disconnect 3 connectors from G13 Board
Ⓓ Remove 2 screws from MB Bracket to detach from LCD Panel
Ⓔ Remove 2 screws from Vesa Brackets to detach from Bottom Frame
Ⓕ Remove 2 screws from Bottom Frame to detach from LCD Panel
Ⓖ Slide-out 2 Panel Brackets to detach from Bezel
Ⓗ Carefully lift up LCD Panel to remove from Bezel



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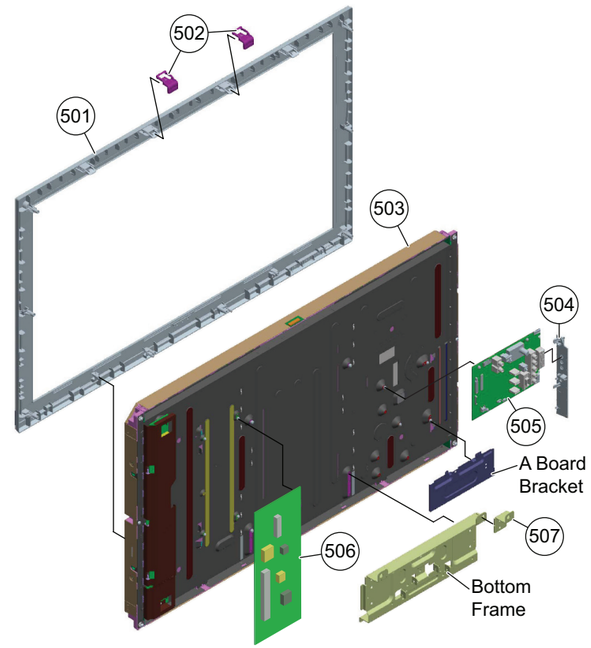

REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
501	4-288-557-01	BEZEL (GF32) (KDL-32BX420/32BX421 ONLY)	
502	4-165-056-01	PANEL SUPPORT (B) (KDL-32BX420/32BX421 ONLY)	
503	NA	LCD PANEL FOR ALL LCD PANEL AND TCON BOARD PART NUMBER INFORMATION REFER TO THE LCD PANELS SERVICE MANUAL	
504	4-264-318-01	BRACKET, SIDE (US) (GW)	
🔒 505	1-895-018-21	A BOARD, COMPLETE (KDL-32BX420 ONLY) (KDL-32BX421 FOR MX ONLY)	
		AFTER REPLACING THE MAIN BOARD OR THE LCD PANEL, YOU MUST UPDATE THE SOFTWARE TO THE LATEST VERSION.	

REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
🔒 505	1-895-018-31	A BOARD, COMPLETE (KDL-32BX421 FOR US/CND ONLY)	
		AFTER REPLACING THE MAIN BOARD OR THE LCD PANEL, YOU MUST UPDATE THE SOFTWARE TO THE LATEST VERSION.	
506	1-474-297-12	G13 BOARD, COMPLETE (KDL-32BX420/32BX421 ONLY)	
* 507	4-266-636-01	BRACKET, VESA (GW32) (KDL-32BX420/32BX421 ONLY)	
●	2-580-592-01	SCREW, +PSW M3X8	
○	2-580-599-01	SCREW, +PSW M4X6	

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

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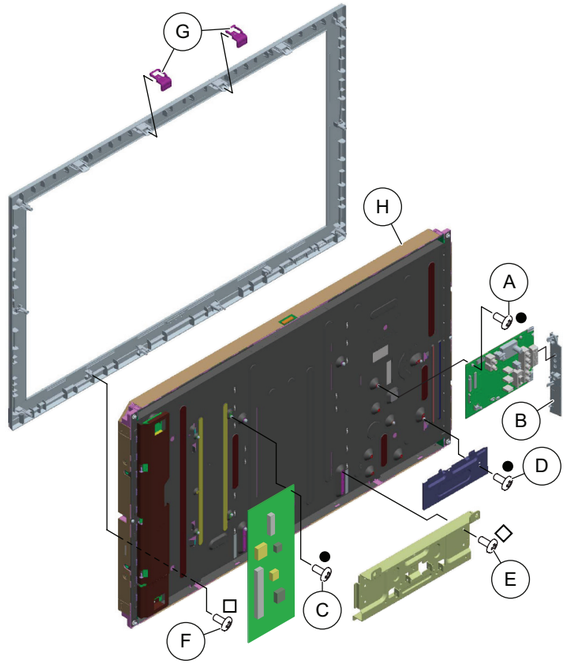
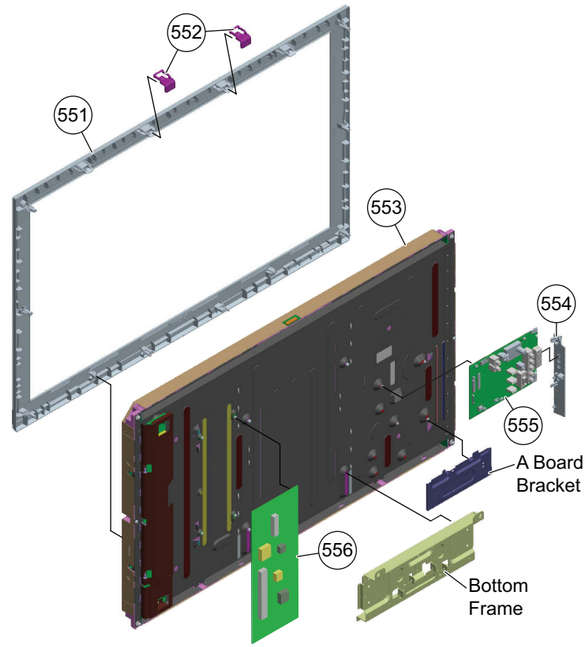
KDL-40BX420/40BX421 ONLY

FOR SERIAL RANGES LISTED BELOW:

KDL-40BX420 6000001 - 7400000
KDL-40BX421 6000001 - 7200000

Ⓐ Remove 4 screws and disconnect 5 connectors from A Board to detach from LCD Panel
Ⓑ Release 2 clips and slide-out Side Bracket to detach from A Board
Ⓒ Remove 5 screws and disconnect 3 connectors from G14 Board
Ⓓ Remove 2 screws from MB Bracket to detach from LCD Panel
Ⓔ Remove 3 screws from Bottom Frame to detach from LCD Panel
Ⓕ Remove 2 screws from LCD Panel to detach from Bezel
Ⓖ Slide-out 2 Panel Brackets to detach from Bezel
Ⓗ Carefully lift up LCD Panel to remove from Bezel





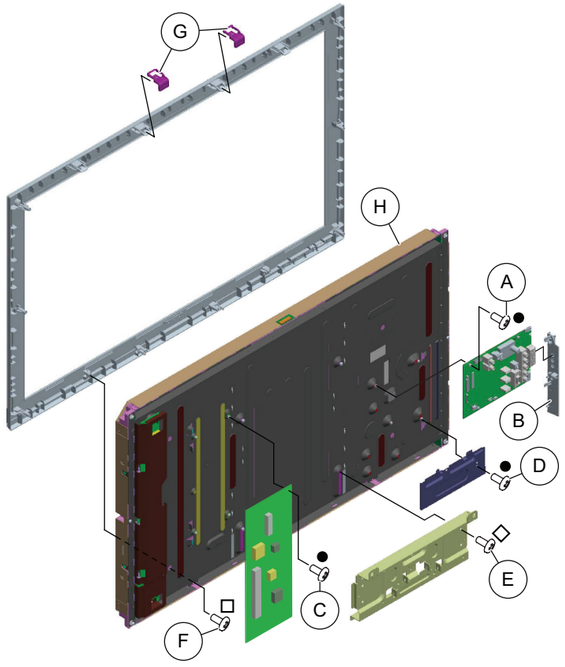
REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
551	4-270-694-11	BEZEL (GW40)	(KDL-40BX420/40BX421 ONLY)
552	4-163-795-01	PANEL SUPPORT (A)	(KDL-40BX420/40BX421 ONLY)
553	NA	LCD PANEL	FOR ALL LCD PANEL AND TCON BOARD PART NUMBER INFORMATION REFER TO THE LCD PANELS SERVICE MANUAL
554	4-264-318-01	BRACKET, SIDE (US) (GW)	
🔒 555	1-857-903-51	A BOARD, COMPLETE	(KDL-40BX420 ONLY) (KDL-40BX421 FOR MX ONLY)
		AFTER REPLACING THE MAIN BOARD OR THE LCD PANEL, YOU MUST UPDATE THE SOFTWARE TO THE LATEST VERSION.	

REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
🔒 555	1-857-903-61	A BOARD, COMPLETE	(KDL-40BX421 FOR US/CND ONLY)
		AFTER REPLACING THE MAIN BOARD OR THE LCD PANEL, YOU MUST UPDATE THE SOFTWARE TO THE LATEST VERSION.	
556	1-474-310-11	G14 BOARD, COMPLETE	(KDL-40BX420/40BX421 ONLY)
□	2-580-640-01	SCREW, +BVTP2 4X16	
◇	2-580-600-01	SCREW, +PSW M4X8	
●	2-580-592-01	SCREW, +PSW M3X8	

FOR SERIAL RANGES LISTED BELOW:

KDL-40BX420	**3000001 - 3800000**
KDL-40BX420	**5000001 - 5500000**
KDL-40BX421	**3000001 - 3800000**
KDL-40BX421	**5000001 - 5300000**

Ⓐ Remove 4 screws and disconnect 5 connectors from A Board to detach from LCD Panel
Ⓑ Release 2 clips and slide-out Side Bracket to detach from A Board
Ⓒ Remove 5 screws and disconnect 3 connectors from G14 Board
Ⓓ Remove 2 screws from MB Bracket to detach from LCD Panel
Ⓔ Remove 3 screws from Bottom Frame to detach from LCD Panel
Ⓕ Remove 2 screws from LCD Panel to detach from Bezel
Ⓖ Slide-out 2 Panel Brackets to detach from Bezel
Ⓗ Carefully lift up LCD Panel to remove from Bezel



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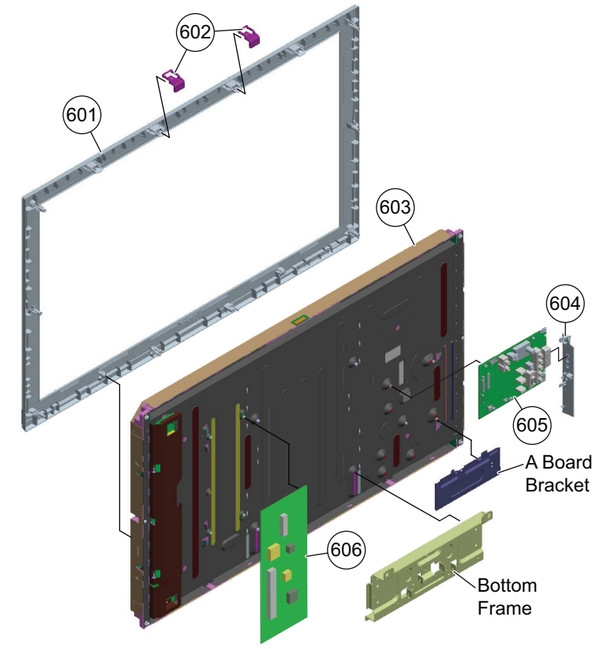

REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
601	4-288-559-01	BEZEL (GF40)	(KDL-40BX420/40BX421 ONLY)
602	4-163-795-01	PANEL SUPPORT (A)	(KDL-40BX420/40BX421 ONLY)
603	NA	LCD PANEL	FOR ALL LCD PANEL AND TCON BOARD PART NUMBER INFORMATION REFER TO THE LCD PANELS SERVICE MANUAL
604	4-264-318-01	BRACKET, SIDE (US) (GW)	
🔒 605	1-895-018-21	A BOARD, COMPLETE	(KDL-40BX420 ONLY) (KDL-40BX421 FOR MX ONLY) AFTER REPLACING THE MAIN BOARD OR THE LCD PANEL, YOU MUST UPDATE THE SOFTWARE TO THE LATEST VERSION.

REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
🔒 605	1-895-018-31	A BOARD, COMPLETE	(KDL-40BX421 FOR US/CND ONLY) AFTER REPLACING THE MAIN BOARD OR THE LCD PANEL, YOU MUST UPDATE THE SOFTWARE TO THE LATEST VERSION.
606	1-474-310-11	G14 BOARD, COMPLETE	(KDL-40BX420/40BX421 ONLY)
□	2-580-640-01	SCREW, +BVTP2 4X16	
◇	2-580-600-01	SCREW, +PSW M4X8	
●	2-580-592-01	SCREW, +PSW M3X8	

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

NOTE: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

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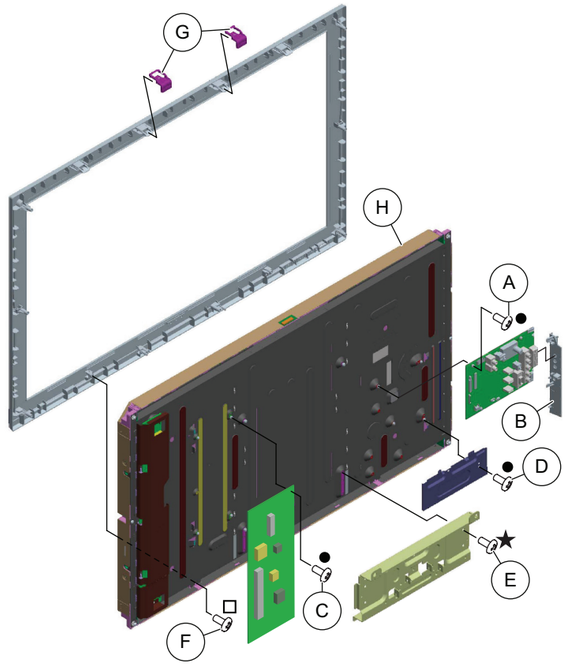
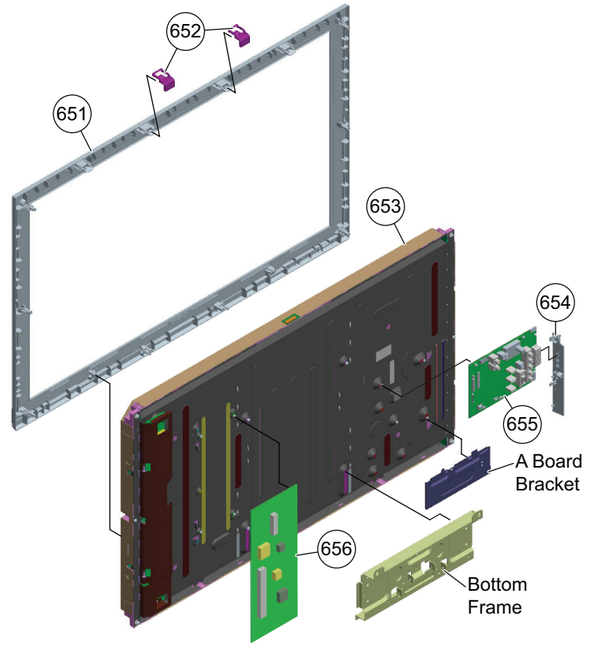
KDL-46BX420/46BX421 ONLY

Ⓐ Remove 4 screws and disconnect 5 connectors from A Board to detach from LCD Panel
Ⓑ Release 2 clips and slide-out Side Bracket to detach from A Board
Ⓒ Remove 5 screws and disconnect 3 connectors from G3 Board
Ⓓ Remove 2 screws from MB Bracket to detach from LCD Panel
Ⓔ Remove 2 screws from Bottom Frame to detach from LCD Panel
Ⓕ Remove 3 screws from LCD Panel to detach from Bezel
Ⓖ Slide-out 2 Panel Brackets to detach from Bezel
Ⓗ Carefully lift up LCD Panel to remove from Bezel





CLEANING THE LCD PANEL

CAUTION: When cleaning the TV, be sure to unplug the power cord to avoid any chance of electric shock.

Clean the cabinet of the TV with a dry soft cloth.
Wipe the LCD screen gently with a soft cloth.

→ Stubborn stains may be removed with a cloth slightly moistened with a solution of mild soap and warm water.
→ If using a chemically pretreated cloth, please follow the instruction provided on the package.
→ Never use strong solvents such as a thinner, alcohol or benzine for cleaning.
→ Periodic vacuuming of the ventilation openings is recommended to ensure to proper ventilation. provided on the package.

REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
651	4-270-696-11	BEZEL (GW46)	(KDL-46BX420/46BX421 ONLY)
652	4-163-795-01	PANEL SUPPORT (A)	(KDL-46BX420/46BX421 ONLY)
653	NA	LCD PANEL	FOR ALL LCD PANEL AND TCON BOARD PART NUMBER INFORMATION REFER TO THE LCD PANELS SERVICE MANUAL
654	4-264-318-01	BRACKET, SIDE (US) (GW)	
🔒 655	1-857-903-51	A BOARD, COMPLETE	(KDL-46BX421 FOR MX ONLY)
		AFTER REPLACING THE MAIN BOARD OR THE LCD PANEL, YOU MUST UPDATE THE SOFTWARE TO THE LATEST VERSION.	

REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
🔒 655	1-857-903-61	A BOARD, COMPLETE	(KDL-46BX421 FOR US/CND ONLY)
		AFTER REPLACING THE MAIN BOARD OR THE LCD PANEL, YOU MUST UPDATE THE SOFTWARE TO THE LATEST VERSION.	
656	1-474-296-11	G3 BOARD, COMPLETE	(KDL-46BX420/46BX421 ONLY)
□	2-580-640-01	SCREW, +BVTP2 4X16	
●	2-580-592-01	SCREW, +PSW M3X8	
★	4-159-298-01	SCREW, +PSW M4X10	

SCREW LEGEND

KDL-32BX320 (SERIAL NO. RANGE 6000001-7400000)/32BX321 (SERIAL NO. RANGE 7100000-7400000)

	P/N	DESCRIPTION	REMARKS	TOTAL
▲	2-580-608-01	SCREW, +PSW M5X16	TABLE-TOP STAND(4)	4
△	7-685-647-79	SCREW, +BVTP2 3X12	SPKR-L(2), SPKR-R(2)	4
■	7-685-648-79	SCREW, +BVTP 3X12 TYPE2 IT-3	RC to TRMNL AREA(1), RC to SIDE BRKT(1)	2
□	2-580-640-01	SCREW, +BVTP2 4X16	RC(9), SPKR BRKT-L(1), SPKR BRKT-R(1), MB BRKTS to BEZ(2)	13
◆	2-580-595-01	SCREW, +PSW M3X12	RC to PNL TOP CNTR(2)	2
◇	2-580-600-01	SCREW, +PSW M4X8	UNDR CVR(1)	1
●	2-580-592-01	SCREW, +PSW M3X8	A BOARD(4), G13 BOARD(4)	8
○	2-580-599-01	SCREW, +PSW M4X6	VESA BRKTS(2), BTM FRM(2), TOP FRM(2), PSU BRKTS(4), MB BRKTS to PSU BRKT-L(2)	12
★	4-159-298-01	SCREW, +PSW M4X10	NOT IN THIS MODEL	0

KDL-32BX320 (SERIAL NO. RANGE 3000001-3800000 and 5000001-5500000)/32BX321 (SERIAL NO. RANGE 5000001-5500000)

	P/N	DESCRIPTION	REMARKS	TOTAL
▲	2-580-608-01	SCREW, +PSW M5X16	TABLE-TOP STAND(4)	4
△	7-685-647-79	SCREW, +BVTP2 3X12	SPKR-L(2), SPKR-R(2)	4
■	7-685-648-79	SCREW, +BVTP 3X12 TYPE2 IT-3	RC to TRMNL AREA(1), RC to SIDE BRKT(1)	2
□	2-580-640-01	SCREW, +BVTP2 4X16	RC(9), SPKR BRKT-L(1), SPKR BRKT-R(1)	11
◆	2-580-595-01	SCREW, +PSW M3X12	RC to PNL TOP CNTR(2)	2
◇	2-580-600-01	SCREW, +PSW M4X8	UNDR CVR(1), VESA BRKTS(2), BTM FRM(2), PSU BRKT-R(2), PSU BRKT-L to BTM FRM(1)	8
●	2-580-592-01	SCREW, +PSW M3X8	A BOARD(4), G13 BOARD(4), PSU BRKT-L to PNL(1), MB BRKT to PNL(2)	11
○	2-580-599-01	SCREW, +PSW M4X6	NOT IN THIS MODEL	0
★	4-159-298-01	SCREW, +PSW M4X10	NOT IN THIS MODEL	0

KDL-32BX420/32BX421 (ALL SERIAL NUMBER RANGES)

	P/N	DESCRIPTION	REMARKS	TOTAL
▲	2-580-608-01	SCREW, +PSW M5X16	TABLE-TOP STAND(4)	4
△	7-685-647-79	SCREW, +BVTP2 3X12	SPKR-L(2), SPKR-R(2)	4
■	7-685-648-79	SCREW, +BVTP 3X12 TYPE2 IT-3	RC to TRMNL AREA(1), RC to SIDE BRKT(1)	2
□	2-580-640-01	SCREW, +BVTP2 4X16	RC(9), SPKR BRKT-L(1), SPKR BRKT-R(1)	11
◆	2-580-595-01	SCREW, +PSW M3X12	RC to PNL TOP CNTR(2)	2
◇	2-580-600-01	SCREW, +PSW M4X8	UNDR CVR(1)	1
●	2-580-592-01	SCREW, +PSW M3X8	A BOARD(4), G13 BOARD(4), MB BRKT to PANEL(2)	10
○	2-580-599-01	SCREW, +PSW M4X6	VESA BRKTS(2), BTM FRM(2)	4
★	4-159-298-01	SCREW, +PSW M4X10	NOT IN THIS MODEL	0

KDL-40BX420/40BX421 (ALL SERIAL NUMBER RANGES)

	P/N	DESCRIPTION	REMARKS	TOTAL
▲	2-580-608-01	SCREW, +PSW M5X16	TABLE-TOP STAND(4)	4
△	7-685-647-79	SCREW, +BVTP2 3X12	SPKR-L(2), SPKR-R(2)	4
■	7-685-648-79	SCREW, +BVTP 3X12 TYPE2 IT-3	RC to TRMNL AREA(1), RC to SIDE BRKT(1)	2
□	2-580-640-01	SCREW, +BVTP2 4X16	RC(7), SPKR BRKT-L(1), SPKR BRKT-R(1), PNL to BEZ(2)	11
◆	2-580-595-01	SCREW, +PSW M3X12	NOT IN THIS MODEL	0
◇	2-580-600-01	SCREW, +PSW M4X8	BTM FRM(3)	3
●	2-580-592-01	SCREW, +PSW M3X8	A BOARD(4), G14 BOARD(5), MB BRKT to PNL(2)	11
○	2-580-599-01	SCREW, +PSW M4X6	NOT IN THIS MODEL	0
★	4-159-298-01	SCREW, +PSW M4X10	RC(4), UNDR CVR(1)	5

KDL-46BX420/46BX421 (ALL SERIAL NUMBER RANGES)

	P/N	DESCRIPTION	REMARKS	TOTAL
▲	2-580-608-01	SCREW, +PSW M5X16	TABLE-TOP STAND(4)	4
△	7-685-647-79	SCREW, +BVTP2 3X12	SPKR-L(2), SPKR-R(2)	4
■	7-685-648-79	SCREW, +BVTP 3X12 TYPE2 IT-3	RC to TRMNL AREA(1), RC to SIDE BRKT(1)	2
□	2-580-640-01	SCREW, +BVTP2 4X16	RC(8), SPKR BRKT-L(1), SPKR BRKT-R(1), PNL to BEZ(3)	13
◆	2-580-595-01	SCREW, +PSW M3X12	NOT IN THIS MODEL	0
◇	2-580-600-01	SCREW, +PSW M4X8	NOT IN THIS MODEL	0
●	2-580-592-01	SCREW, +PSW M3X8	A BOARD(4), G3 BOARD(5), MB BRKT to PNL(2)	11
○	2-580-599-01	SCREW, +PSW M4X6	NOT IN THIS MODEL	0
★	4-159-298-01	SCREW, +PSW M4X10	RC(4), BTM FRM(2), UNDR CVR(1)	7

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

NOTE: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

NOTE: The components identified by a red outline and a 🔒 mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced.
See Appendix A: Encryption Key Components in the back of this manual.

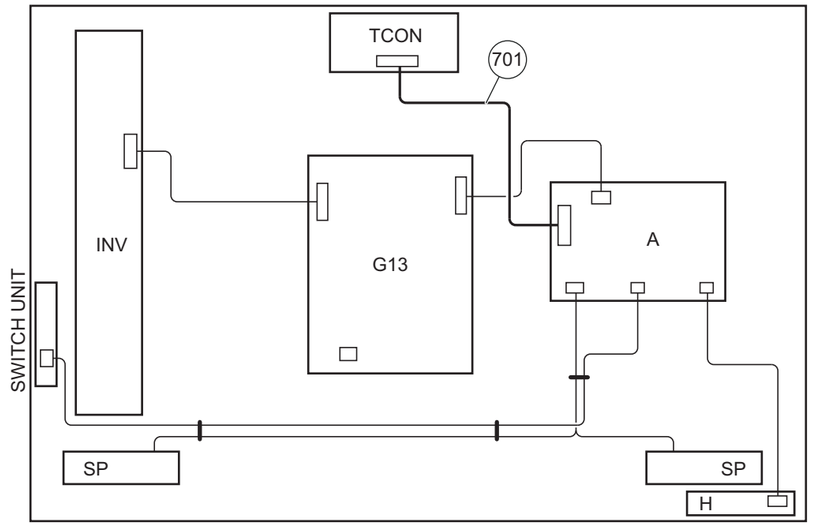
(Check the Sony Authorized Servicer Portal at www.sony.com/asp for any additional service related issues for this model.)

CONNECTORS

KDL-32BX320/32BX321/32BX420/32BX421 ONLY

FOR SERIAL RANGES LISTED BELOW:

KDL-32BX320	6000001 - 7400000
KDL-32BX321	7100001 - 7400000
KDL-32BX420	6000001 - 7200000
KDL-32BX421	6000001 - 7200000



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
701	1-910-103-38	(LVDS) CONNECTOR ASSEMBLY 32	51P
		(KDL-32BX320/32BX321 ONLY)	
701	1-910-103-41	(LVDS) CONNECTOR ASSEMBLY 32	51P
		(KDL-32BX420/32BX421 ONLY) (FOR CMO PANEL)	
701	1-910-103-42	(LVDS) CONNECTOR ASSEMBLY 32	51P
		(KDL-32BX420/32BX421 ONLY) (FOR S-LCD PANEL)	

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

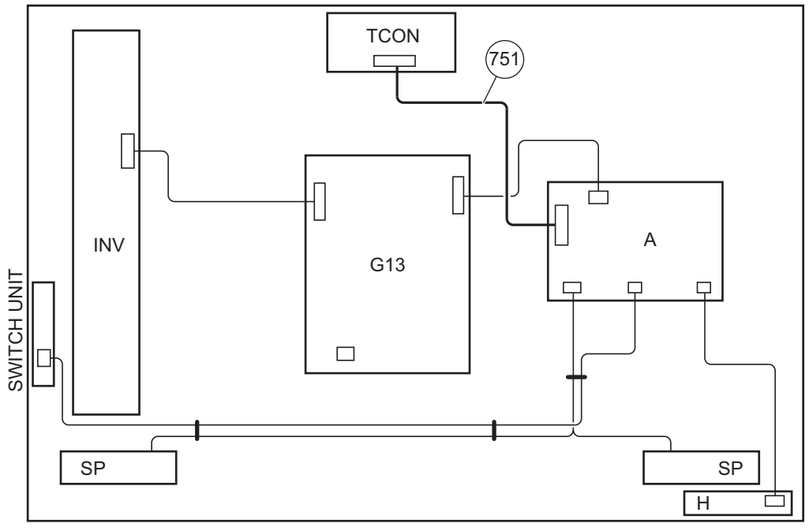
NOTE: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

NOTE: The components identified by a red outline and a 🔒 mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced.
See Appendix A: Encryption Key Components in the back of this manual.

(Check the Sony Authorized Servicer Portal at www.sony.com/asp for any additional service related issues for this model.)

FOR SERIAL RANGES LISTED BELOW:

KDL-32BX320	3000001 - 3800000
KDL-32BX320	5000001 - 5500000
KDL-32BX321	5000001 - 5500000
KDL-32BX420	3000001 - 3800000
KDL-32BX420	5000001 - 5300000
KDL-32BX421	3000001 - 3800000

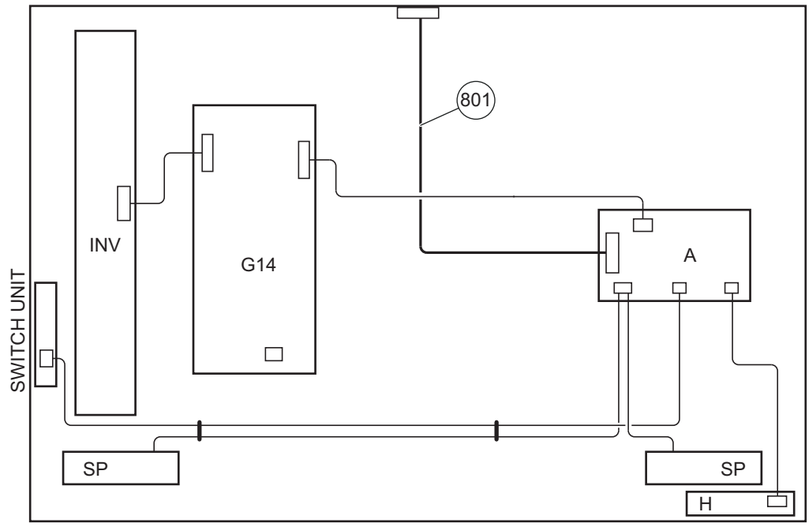


REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
751	1-910-104-57	(LVDS) CONNECTOR ASSEMBLY 32W 51P (KDL-32BX320/32BX321 ONLY)	
751	1-910-104-58	(LVDS) CONNECTOR ASSEMBLY 32F 51P (KDL-32BX420/32BX421 ONLY)	

KDL-40BX420/40BX421 ONLY

FOR SERIAL RANGES LISTED BELOW:

KDL-40BX420	6000001 - 7400000
KDL-40BX421	6000001 - 7200000



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
801	1-910-103-39	(LVDS) CONNECTOR ASSEMBLY 40 51P (KDL-40BX420/40BX421 ONLY)	

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

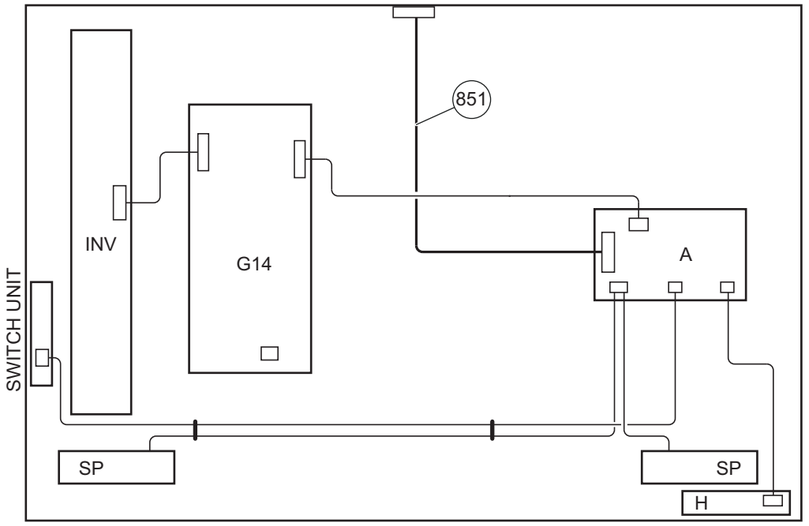
NOTE: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

NOTE: The components identified by a red outline and a 🔒 mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced.
See Appendix A: Encryption Key Components in the back of this manual.

(Check the Sony Authorized Servicer Portal at www.sony.com/asp for any additional service related issues for this model.)

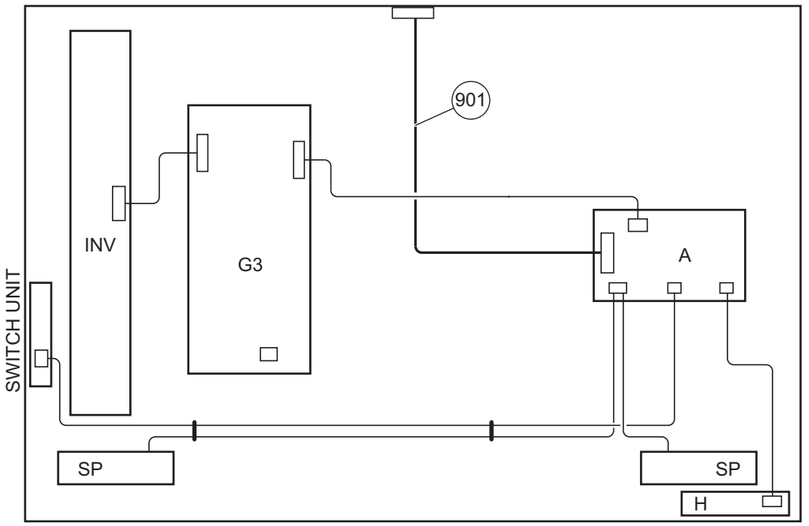
FOR SERIAL RANGES LISTED BELOW:

KDL-40BX420	**3000001 - 3800000**
KDL-40BX420	**5000001 - 5500000**
KDL-40BX421	**3000001 - 3800000**
KDL-40BX421	**5000001 - 5300000**



	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
*	851	1-910-104-59	(LVDS) CONNECTOR ASSEMBLY 40 (KDL-40BX420/40BX421 ONLY)	51P

KDL-46BX420/46BX421 ONLY



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
901	1-910-103-40	(LVDS) CONNECTOR ASSEMBLY 46 (KDL-46BX420/46BX421 ONLY)	51P

SECTION 6 - DISASSEMBLY/PART NUMBER INFORMATION

ACCESSORIES AND PACKAGING

	3-299-071-05	FLYER, SAFETY
	4-275-988-11	GUIDE, QUICK SET UP (ALL MODELS EXCEPT KDL-32BX321)
	4-275-988-21	GUIDE, QUICK SET UP (ALL MODELS EXCEPT KDL-32BX321)
	4-275-988-31	GUIDE, QUICK SET UP (ALL MODELS EXCEPT KDL-46BX421)
	4-270-476-11	MANUAL, INSTRUCTION (ALL MODELS EXCEPT KDL-32BX321)
	4-270-476-21	MANUAL, INSTRUCTION (ALL MODELS EXCEPT KDL-32BX321)
	4-270-476-31	MANUAL, INSTRUCTION (ALL MODELS EXCEPT KDL-46BX421)
*	4-275-368-11	SUPPLEMENT(STAND INSTALLATION) (REFER TO SN RANGE LISTED ON PAGE 36)
*	4-291-757-11	SUPPLEMENT(STAND INSTALLATION)

2-580-608-01 SCREW, +PSW M5X16
(SCREWS TO ATTACH TABLE-TOP STAND TO LCD TV)
For product protection and safety reasons, Sony strongly recommends that you use the screws provided with the TV
CAUTION: These screws cannot be used to secure the TV to the Wall Mount Brackets

MISCELLANEOUS

4-283-209-01	INSULATION SHEET (GW32) G(A,L) (KDL-32BX320/32BX321 ONLY) (REFER TO SN RANGE LISTED ON PAGE 36)
4-281-008-01	SHEET, INSULATION (GW32)B (ALL MODELS EXCEPT KDL-32BX320/32BX321) (REFER TO SN RANGE LISTED ON PAGE 36)
4-290-627-01	SHEET, INSULATION (GF32) G (KDL-32BX320/32BX321/32BX420/32BX421 ONLY)
4-290-626-01	SHEET, INSULATION (GF32) B (KDL-32BX420/32BX421/40BX420/40BX421 ONLY)
4-289-497-01	SHEET, INSULATION (GF40) G (KDL-40BX420/40BX421 ONLY)
4-087-858-41	SHEET, VIBRATION PROOF (KDL-32BX420/32BX421/40BX420/40BX421 ONLY)
X-2348-140-3	SUPPORT BELT KIT

REMOTE COMMANDER

1-489-459-11	REMOTE COMMANDER (RM-YD065)

WIRE DRESSING

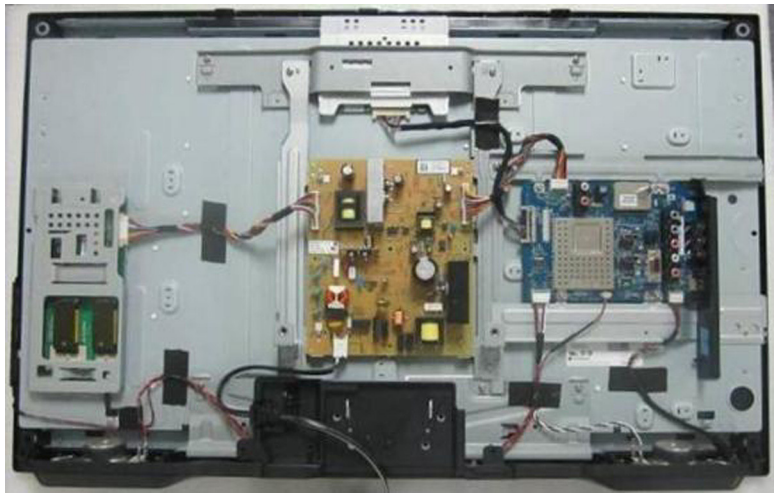


FIGURE 6-1. KDL-32BX320 OVERALL WIRE DRESSING
(SERIAL NO. RANGE 6000001-7400000)

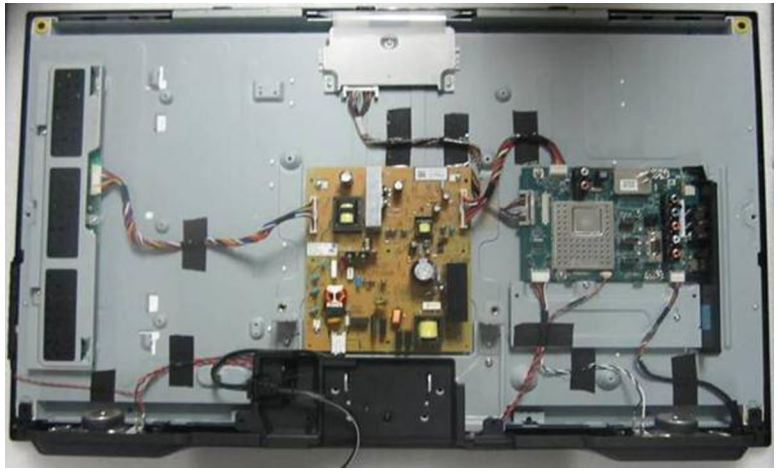


FIGURE 6-2. KDL-32BX420 OVERALL WIRE DRESSING

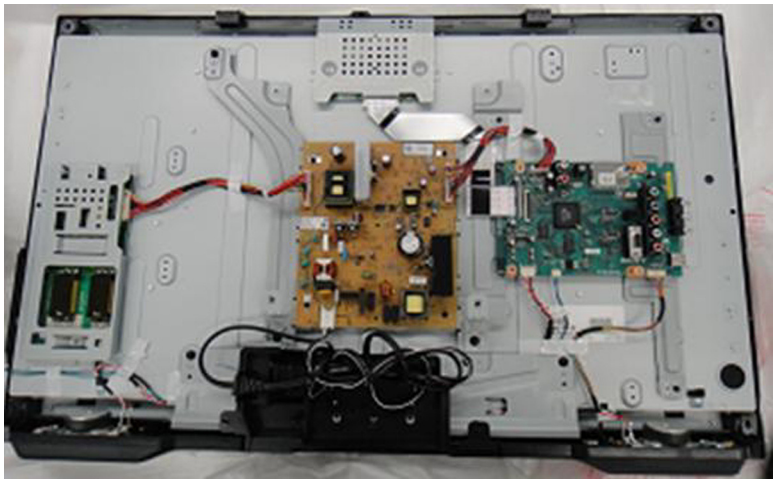


FIGURE 6-3. KDL-32BX320 OVERALL WIRE DRESSING
(SERIAL NO. RANGE 3000001-3800000 AND 5000001-5500000)

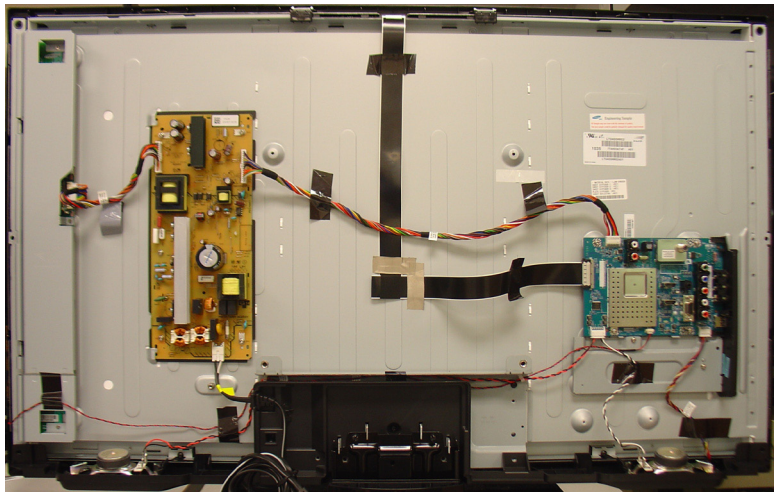


FIGURE 6-4. KDL-40BX420 OVERALL WIRE DRESSING

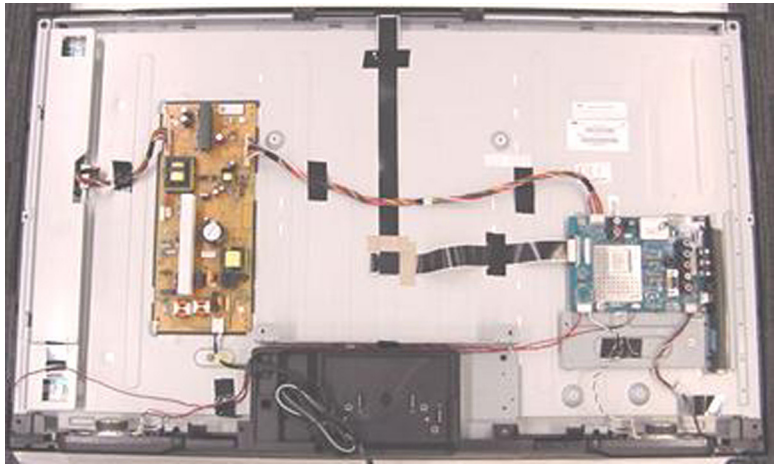


FIGURE 6-5. KDL-46BX420 OVERALL WIRE DRESSING

SECTION 7 - SERVICE ADJUSTMENTS

OVERVIEW

As mentioned in Section 2 - Software Requirements on page 14, the models in this manual utilize a “generic” type main board, therefore certain service adjustments settings must be changed or confirmed when either the main Board, LCD Panel, or TCON Board are replaced.

UPDATING THE SOFTWARE

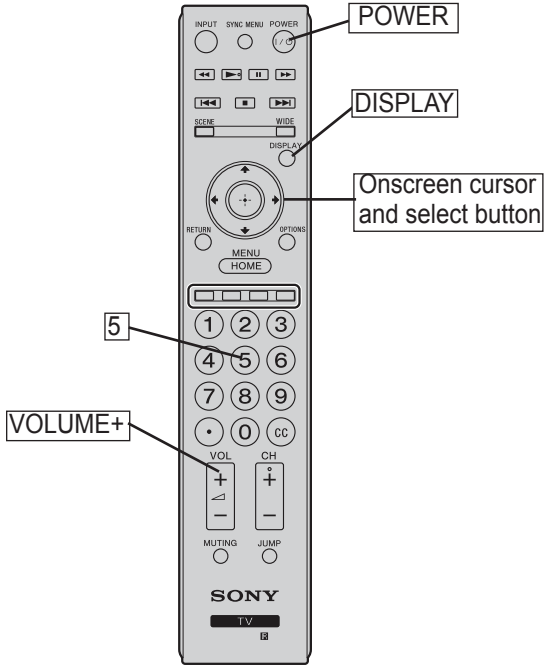
After replacing the main Board, LCD Panel, or TCON Board, you MUST UPDATE the SOFTWARE to the latest version. Instructions for updating the software are included with the software package on the Sony Authorized Service Portal website.

ACCESSING SERVICE ADJUSTMENT MODE

This set does not use Service Mode for adjustments. To make adjustments, refer to Accessing Factory Adjustment Mode on page 57. However, you can access the Self diagnosis history page from Service Mode.

1. TV must be in Standby mode. (Power On).
2. Press the following buttons on the Remote Commander within a second of each other:

DISPLAY / POWER → Channel 5 → Volume + →



RM-YD065

Service Mode			
Sound Adjust…		>>	
Wide Band Tuning		>>	
Range Scan…		>>	
Self diagnosis history		>>	
Status Information…		>>	
LVDS Spectrum(%0)	<[	20	]>
DPMS	<[	Off	]>
Low of HPD	<[	5	]>
TVD_MCDONE_CNT	<[	20	]>
Demo Special		>>	
Bypass AVI Info Detect	<[	Off	]>
Panel Selection	<[	W-CM22	]>

[</>]Set [Menu] Exit

3. To access the Self Diagnosis history page, press ↓ until Self diagnosis history is highlighted, and then press ⊕.

SELF CHECK		
Back		<<
002	MAIN_POWE	001
003	AUD_PORT	000
003	DC_ALERT	000
004	BALANCER	000
005	TCON_ERR	000
005	HFR_ERR	000
005	P_ID_ERR	000
005	PANEL_POWE	000
006	BACKLITE	000
007	TEMP_ERR	000

00000 00010 00000 [Menu] Exit

4. To exit service mode, turn the power off.

ACCESSING FACTORY ADJUSTMENT MODE

For these models, adjusment data is changed in Factory Mode.

1. TV must be ON.
2. Press the following buttons on the Remote Commander within a second of each other:

→ → MUTING → ⊕ → MUTING → HOME

Factory Mode			
Input Source	<[	TV	]>
Aging Mode	<[	Off	]>
Internal Pattern	<[	Off	]>
EDID WP		Protection	
Site Air Channels	<[	Off	]>
Site Cable Channels	<[	Off	]>
Panel_ID		Off	
Color Temp		>>	
ADC Calibration		>>	
Factory Reset (limited)	<[	Off	]>
Auto Phase	<[	Off	]>
Factory Reset (default)	<[	Off	]>

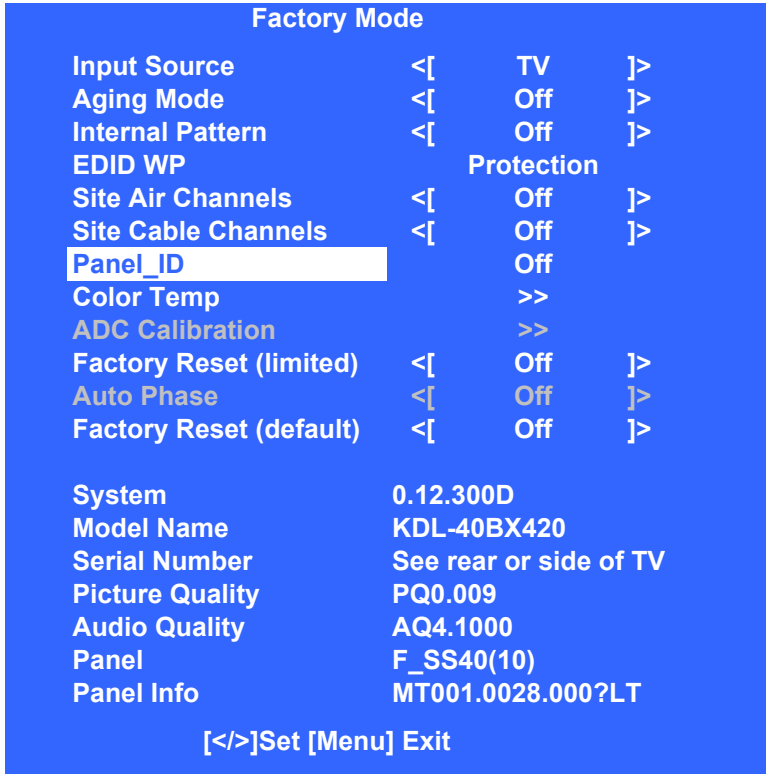
System	0.12.300D
Model Name	KDL-40BX420
Serial Number	See rear or side of TV
Picture Quality	PQ0.009
Audio Quality	AQ4.1000
Panel	F_SS40(10)
Panel Info	MT001.0028.000?LT

[</>]Set [Menu] Exit

SELECTING THE PANEL ID CODE

After replacing the main Board or the LCD Panel, you must update the software to the latest version and then select the Panel ID from Factory Mode. Instructions for updating the software are included with the software package on the Sony Authorized Service Portal site.

3. In Factory Mode, use the ↓ button to scroll down to select **Panel_ID**.



4. Using the table below, press the → or ← Onscreen cursor buttons to select the **Panel_ID**.

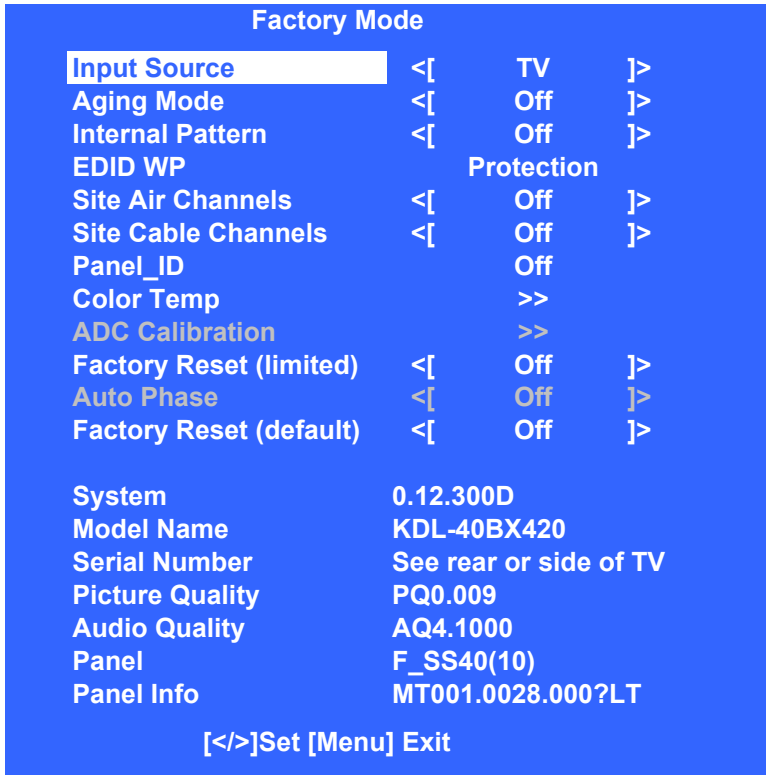
Modle Name	Panel Code	Panel Type	Panel ID
KDL-32BX320 KDL-32BX321	F_SS32	SLCD	LTY320HN02-001
KDL-32BX420 KDL-32BX421	W-LG32	LGD	LC320WXN-SCB1
KDL-32BX420 KDL-32BX421	F_CM32	CMI	V315H3L01
KDL-40BX420 KDL-40BX421	F_SS40	SLCD	LTU400HM02-A01
KDL-46BX420 KDL-46BX421	F_SS46	SLCD	LTY460HN01-A01

5. To exit Factory Mode without turning Off the TV, press the RETURN button.

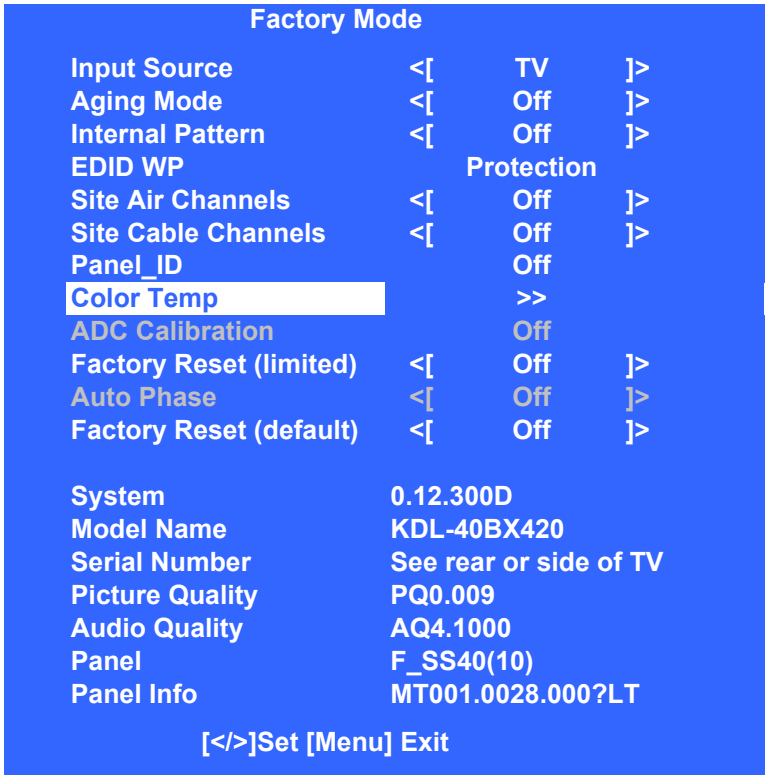
ADJUSTING THE COLOR TEMPERATURE

The default White Balance data values ae set for optimal viewing. The following instructions are for technicians who have been requested to customize calibrations for their customers.

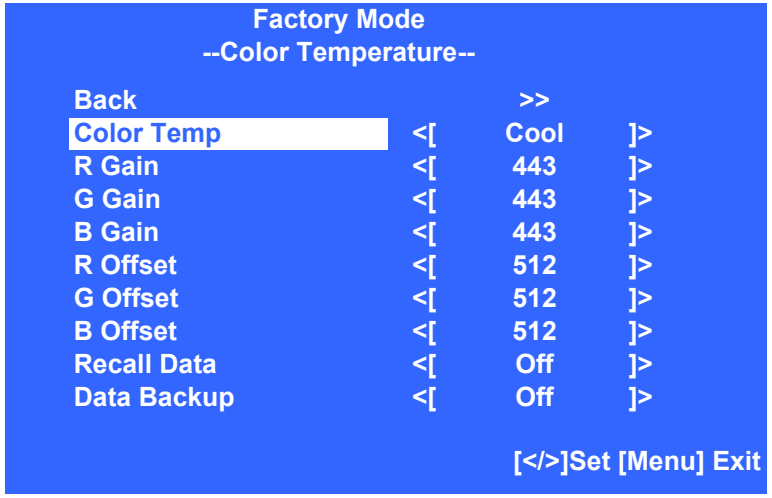
1. TV must be ON.
2. Press the following buttons on the Remote Commander within a second of each other:



3. Using the ↓ button, scroll down to select **Color Temp**.



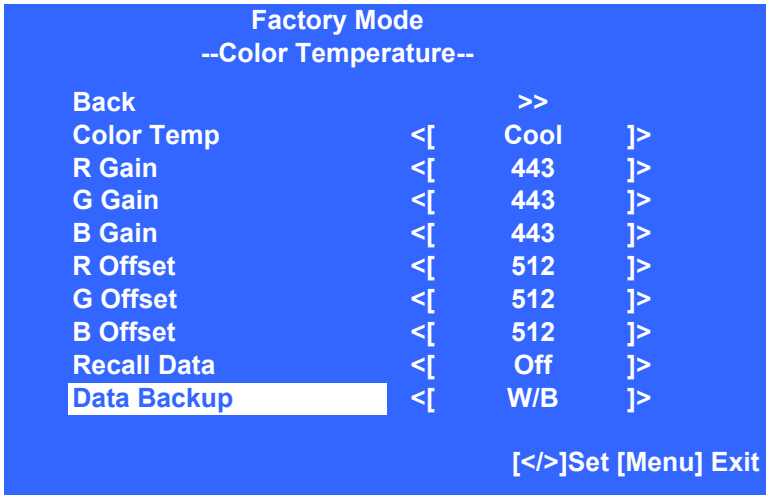
4. Press ● to access **Color Temp** adjustments.



5. Press the → or ← buttons to select the **Color Temp** type. (Cool, Neutral, Warm1, or Warm2.)
6. After the correct Color Temperature is selected, press the ↓ to select the Temperature type that needs to be modified.
7. After the correct Temperature type is selected, press the → to increase the data value, or press ← to decrease the data value.
8. Complete the data value adjustments to the remaining temperature items within the selected temperature type.

   NOTE: Changes to the data value must be saved within the Temperature type selected before making changes to one of the other Temperature types.

9. To save the changes, press the ↓ to select **Data Backup**, then press ⊕.



10. Do one of the following:

    a. To make changes to one of the other Temperature types, repeat steps 5 through 9.

    b. To exit Factory mode, press POWER.

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APPENDIX A - TRIAGE SHEETS

The following Triage documents are for general reference purposes. To access the most recent version of theTriage documents for the models listed in this manual, login into the Sony Authorized Servicer Portal at www.sony.com/asp.

Sony KDL32BX320/32BX321 Technical Triage Summary Sheet

Before you make the service call…

1. Confirm the symptom from the customer.
2. Select that symptom from the chart.
3. Bring all the boards listed for that symptom.
4. Follow the troubleshooting charts in the technical guides to isolate the board.
5. Chart Color Code

RED DOT: Most likely defective part

BLUE TRIANGLE: Secondary possible defective part

BLACK TEXT: Board and Part # that may correct the symptom

CHASSIS: AZ2UK

LAST UPDATED: 1/18/11

Reference	Power LED blinking red diagnostics					No Power	Video - missing or distorted				Remote	Audio		
	2	3	5	6	7	No Green Power LED (Dead Set)	Stationary colored lines or dots	Video 2 0nly	Tuner Only	No video all Inputs	No Remote	No Audio	Part #	REF #
A BOARD		●			●	▲		●	●	●		●	1-857-903-21	105
G13 BOARD	●	▲		▲		●							1-474-297-12	106
H BOARD											●		1-857-898-21	57
LCD Panel	▲		●	●			▲			▲			SEE LCD PANEL MANUAL	
Problem	POWER	POWER	PANEL	INV	TEMP									

FIGURE APPENDIX A-1. KDL-32BX320/32BX321 MODELS ONLY

Sony KDL32BX420 Technical Triage Summary Sheet

Before you make the service call…

1. **Confirm the symptom from the customer.**
2. **Select that symptom from the chart.**
3. **Bring all the boards listed for that symptom.**
4. **Follow the troubleshooting charts in the technical guides to isolate the board.**
5. **Chart Color Code**

RED DOT: Most likely defective part

BLUE TRIANGLE: Secondary possible defective part

BLACK TEXT: Board and Part # that may correct the symptom

CHASSIS: AZ2UK

LAST UPDATED: 1/18/11

Reference	Power LED blinking red diagnostics					No Power	Video - missing or distorted				Remote	Audio		
	2	3	5	6	7	No Green Power LED (Dead Set)	Stationary colored lines or dots	Video 2 0nly	Tuner Only	No video all Inputs	No Remote	No Audio	Part #	REF #
A BOARD		●			●	▲		●	●	●		●	1-857-903-31	155
G13 BOARD	●	▲		▲		●							1-474-297-12	156
H BOARD											●		1-857-898-21	57
LCD Panel	▲		●	●			▲			▲			SEE LCD PANEL MANUAL	
Problem	POWER	POWER	PANEL	INV	TEMP									

FIGURE APPENDIX A-2. KDL-32BX420 MODELS ONLY

Sony KDL32BX421 Technical Triage Summary Sheet

Before you make the service call…

1. Confirm the symptom from the customer.
2. Select that symptom from the chart.
3. Bring all the boards listed for that symptom.
4. Follow the troubleshooting charts in the technical guides to isolate the board.
5. Chart Color Code

RED DOT: Most likely defective part

BLUE TRIANGLE: Secondary possible defective part

BLACK TEXT: Board and Part # that may correct the symptom

CHASSIS: AZ2UK

LAST UPDATED: 1/18/11

Reference	Power LED blinking red diagnostics					No Power	Video - missing or distorted				Remote	Audio		
	2	3	5	6	7	No Green Power LED (Dead Set)	Stationary colored lines or dots	Video 2 0nly	Tuner Only	No video all Inputs	No Remote	No Audio	Part #	REF #
A BOARD		●			●	▲		●	●	●		●	1-857-903-41 (FOR US/CND MODELS) 1-857-903-31 (FOR MX/LA MODELS)	155
G13 BOARD	●	▲		▲		●							1-474-297-12	156
H BOARD											●		1-857-898-21	57
LCD Panel	▲		●	●			▲			▲			SEE LCD PANEL MANUAL	
Problem	POWER	POWER	PANEL	INV	TEMP									

FIGURE APPENDIX A-3. KDL-32BX421 MODELS ONLY

Sony KDL40BX420 Technical Triage Summary Sheet

Before you make the service call…

1. **Confirm the symptom from the customer.**
2. **Select that symptom from the chart.**
3. **Bring all the boards listed for that symptom.**
4. **Follow the troubleshooting charts in the technical guides to isolate the board.**
5. **Chart Color Code**

RED DOT: Most likely defective part

BLUE TRIANGLE: Secondary possible defective part

BLACK TEXT: Board and Part # that may correct the symptom

CHASSIS: AZ2UK

LAST UPDATED: 1/18/11

Reference	Power LED blinking red diagnostics					No Power	Video - missing or distorted				Remote	Audio		
	2	3	5	6	7	No Green Power LED (Dead Set)	Stationary colored lines or dots	Video 2 0nly	Tuner Only	No video all Inputs	No Remote	No Audio	Part #	REF #
A BOARD		●			●	▲		●	●	●		●	1-857-903-51	155
G14 BOARD	●	▲		▲		●							1-474-310-11	156
H BOARD											●		1-857-898-21	57
LCD Panel	▲		●	●			▲			▲			SEE LCD PANEL MANUAL	
Problem	POWER	POWER	PANEL	INV	TEMP									

FIGURE APPENDIX A-4. KDL-40BX420 MODELS ONLY

Sony KDL40BX421 Technical Triage Summary Sheet

Before you make the service call…

1. Confirm the symptom from the customer.
2. Select that symptom from the chart.
3. Bring all the boards listed for that symptom.
4. Follow the troubleshooting charts in the technical guides to isolate the board.
5. Chart Color Code

RED DOT: Most likely defective part

BLUE TRIANGLE: Secondary possible defective part

BLACK TEXT: Board and Part # that may correct the symptom

CHASSIS: AZ2UK

LAST UPDATED: 1/18/11

Reference	Power LED blinking red diagnostics					No Power	Video - missing or distorted				Remote	Audio		
	2	3	5	6	7	No Green Power LED (Dead Set)	Stationary colored lines or dots	Video 2 0nly	Tuner Only	No video all Inputs	No Remote	No Audio	Part #	REF #
A BOARD		●			●	▲		●	●	●		●	1-857-903-61 (FOR US/CND MODELS) 1-857-903-51 (FOR MX/LA MODELS)	155
G14 BOARD	●	▲		▲		●							1-474-310-11	156
H BOARD											●		1-857-898-21	57
LCD Panel	▲		●	●			▲			▲			SEE LCD PANEL MANUAL	
Problem	POWER	POWER	PANEL	INV	TEMP									

FIGURE APPENDIX A-5. KDL-40BX421 MODELS ONLY

Sony KDL46BX420 Technical Triage Summary Sheet

Before you make the service call…

1. Confirm the symptom from the customer.
2. Select that symptom from the chart.
3. Bring all the boards listed for that symptom.
4. Follow the troubleshooting charts in the technical guides to isolate the board.
5. Chart Color Code

RED DOT: Most likely defective part

BLUE TRIANGLE: Secondary possible defective part

BLACK TEXT: Board and Part # that may correct the symptom

CHASSIS: AZ2UK

LAST UPDATED: 1/18/11

Reference	Power LED blinking red diagnostics					No Power	Video - missing or distorted				Remote	Audio		
	2	3	5	6	7	No Green Power LED (Dead Set)	Stationary colored lines or dots	Video 2 0nly	Tuner Only	No video all Inputs	No Remote	No Audio	Part #	REF #
A BOARD		●			●	▲		●	●	●		●	1-857-903-51	155
G3 BOARD	●	▲		▲		●							1-474-296-11	156
H BOARD											●		1-857-898-21	57
LCD Panel	▲		●	●			▲			▲			SEE LCD PANEL MANUAL	
Problem	POWER	POWER	PANEL	INV	TEMP									

FIGURE APPENDIX A-6. KDL-46BX420 MODELS ONLY

Sony KDL46BX421 Technical Triage Summary Sheet

Before you make the service call…

1. Confirm the symptom from the customer.
2. Select that symptom from the chart.
3. Bring all the boards listed for that symptom.
4. Follow the troubleshooting charts in the technical guides to isolate the board.
5. Chart Color Code

RED DOT: Most likely defective part

BLUE TRIANGLE: Secondary possible defective part

BLACK TEXT: Board and Part # that may correct the symptom

CHASSIS: AZ2UK

LAST UPDATED: 1/18/11

Reference	Power LED blinking red diagnostics					No Power	Video - missing or distorted				Remote	Audio		
	2	3	5	6	7	No Green Power LED (Dead Set)	Stationary colored lines or dots	Video 2 0nly	Tuner Only	No video all Inputs	No Remote	No Audio	Part #	REF #
A BOARD		●			●	▲		●	●	●		●	1-857-903-61 (FOR US/CND MODELS) 1-857-903-51 (FOR MX/LA MODELS)	155
G3 BOARD	●	▲		▲		●							1-474-296-11	156
H BOARD											●		1-857-898-21	57
LCD Panel	▲		●	●			▲			▲			SEE LCD PANEL MANUAL	
Problem	POWER	POWER	PANEL	INV	TEMP									

FIGURE APPENDIX A-7. KDL-46BX421 MODELS ONLY

APPENDIX B - OPERATING INSTRUCTIONS

The Operating Instructions are the documents that are included with the television. Sony's BRAVIA TVs now come with an on-screen i-Manual. To learn more about the TVs features access the i-Manual using the customers remote control.